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An Address
ON
WET WINDS AND EARLY PHTHISIS.

DELIVERED TO THE SOUTH-WESTERN BRANCH OF THE BRITISH MEDICAL ASSOCIATION

BY

WILLIAM GORDON, M.D., F.R.C.P.,
PHYSICIAN TO THE ROYAL DEVON AND EXETER HOSPITAL; PRESIDENT OF THE BRANCH.

THE subject which I have chosen for my address is one which I hope will be considered appropriate. It has been closely associated with the south-west; for its initial observation was made in Devonshire, and its subsequent development owes much to the able and generous help of Devon colleagues. At the present moment fresh figures compel fresh insistence upon it. Its importance now spreads far beyond the limits of its native county. I have tried in every way in this investigation to avoid mistake, and, above all, to escape the pitfall of bias in my own mind. What is more difficult to eliminate is bias in the minds of others.

To convey to you the full significance of the tables I am going to place before you, illustrating the influence of rain-bearing winds on the fate of early cases of phthisis, it is necessary very briefly to review the work which has led up to them.

The Initial Observation.

Twenty-five years ago, in the autumn of 1899, I compared the phthisis death rates of the rural sanitary districts of Devon, in the hope of discovering the best site for a phthisis sanatorium, and found, to my great astonishment, that the localities then accounted ideal, sheltered from north and east winds but open to the south and west, were precisely those in which the mortality from phthisis was highest. I tried to explain this distribution of the death rate by reference to general sanitation, to geology, and to rainfall, and failed. Nothing except exposure to west and south-west winds seemed to offer a satisfactory explanation. But this explanation was so contrary to the time-honoured teaching of the day that nothing but a searching test could have convinced me of its validity.

The First Test.

This test was as follows. I chose four separate rural sanitary districts in different parts of the county, with an aggregate population of over 85,000 persons, and examined the phthisis death rates in their parishes (the small areas of parishes allowing of fair comparison of relative shelter and exposure), and in every one of these districts the correspondence between relative exposure to west and south-west winds and relatively high phthisis mortality was found strikingly apparent. These figures were read to a meeting of the Royal Medical and Chirurgical Society in 1900.

The Second Test.

After it had been urged (rightly) that female death rates would furnish safer conclusions than mixed death rates, and (wrongly) that wind from any quarter might be equally hurtful, I took for investigation Okehampton Rural District, in the centre of Devon, presenting specially marked contrasts of exposure and shelter in respect of all winds except the south (which practically does not reach it), and constructed from it, not merely tables, but, to make the test severer, maps, both of the female parish phthisis death rates and of the relative parish exposures in respect of south-west, west, north-west, north, north-east, east, and south-east winds. In this undertaking I had the invaluable help of my friend Dr. E. H. Young, the medical officer of health for the district. The maps display even more strikingly the relation between these winds and the phthisis death rates; the correspondence is remarkable. In this investigation there came out a definite though slighter effect of north-west wind upon the death rates. Therefore, in all subsequent work, this, the third chief rain-bearing wind of Devon, has also been taken into account.

The Third Test.

It was now objected (unreasonably, in view of other accepted work) that ten years was too short a period on which to found conclusions. So another specially suitable area, as regards contrasts of shelter and exposure, consisting of twenty-three parishes of the Exmoor part of Barnstaple Rural District, was examined over a period of forty-five years. In this work I have to thank my friend Dr. J. R. Harper, the district medical officer of health, for his invaluable help. Here once more the same law came plainly into view. Not only was the effect of exposure to north-west, west, and south-west winds upon female phthisis mortality evident for the whole period of forty-five years, but it was evident for every one of the nine successive five-yearly periods except the first. Further, during the twenty years 1885 to 1904, in which Koch's discovery of the tubercle bacillus must be held to have made the diagnosis more certain, the contrast in the death rates between exposure and shelter became more marked; and in the decade 1890 to 1899 the death rates presented a still more remarkable contrast. Finally, again to test even more severely the correspondence, maps were made showing the female phthisis death rates between 1890 and 1899, and the relative parish exposures to south-west, west, and north-west winds. Again the correspondence was very striking.

These two last series of comparisons—namely, those in the rural districts of Barnstaple and Okehampton—have been the subject of the first independent inquiry into the correctness of my figures. Dr. John Brownlee, in his able report to the Medical Research Council on the epidemiology of phthisis in Great Britain and Ireland (Part 3, 1920), re-examined the death rates in the parishes of these two districts, over a different series of years from mine, using a different method, and concluded that "it therefore appears probable that in these districts exposure to the south-west winds is associated quite definitely with an increased susceptibility to phthisis"; adding, "I think it must be admitted that Dr. Gordon has made out a very good case for further extensive detailed inquiry, and that he must be congratulated on the work which he has done." I need scarcely say that I only quote these remarks in full in order to make clear the extent of Dr. Brownlee's agreement. The subject is far too grave for egotistical triviality. It is noteworthy that, till a few weeks ago, this has been the only serious attempt made to verify my work.

The Fourth Test.

One of the objections raised to my conclusions (if, indeed, erroneous explanation can be counted as objection) was that these winds only acted indirectly by compelling the closure of all doors and windows against them! As if all doors and windows were only on the western sides of the houses! So another investigation was devised. If it could be shown, in a town, that the streets whose roadways were swept by these winds suffered most from phthisis, that would be some evidence that the effect is a direct one on the people living in those streets, since they must be regarded as the chief users of them, and windows and doors need not be generally closed against wind which only blows past them. A report issued by the sanitary authority of Exeter afforded the opportunity of investigating this point.

It was then found that not only had the streets of Exeter, whose roadways were swept by the westerly winds, about twice the female phthisis death rate of those whose roadways were sheltered, but that, when the streets on different soils were separately considered, the same contrast came out, the ratio being rather less than 2 to 1 on clay, rather more than 2 to 1 on sandstone, and more than 3 to 1 on gravel. Further, when the streets were divided into four classes according to their differing rateable house values, in every class a ratio of about 2 to 1 was maintained. Lastly, when specially exposed roadways were compared with specially sheltered roadways (differences of soil being eliminated by only considering streets on clay, those being the most populous), the ratio became nearly 4 to 1!

A World-wide Investigation.

These four tests convinced me that, in Devonshire, populations exposed to prevalent strong rain-bearing winds suffer more from phthisis than populations sheltered from them. The next step was to see if the same law could be traced elsewhere. Now here it is necessary to say that the vast bulk of the available material abroad was not sufficiently reliable to support positive conclusions. But my search through many parts of the world was rather for *contradiction* than for confirmation of my other results. Such contradiction might have been very useful, I thought, in indicating fallacies undiscovered in Devonshire. *But there were actually no contradictions.* From every available part of the world confirmation came. As an interesting item I may mention that from the Sandwich Islands, which Hann says afford the finest example of a contrast between a wet and windy side and a dry and wind-sheltered side, Dr. Grace wrote to me that, in respect of phthisis, "the fact that the windward side is the bad side is well recognized here."

Bovine Tuberculosis.

But the effect of these winds on tubercle is not confined to human phthisis. In 1910 Professor Delépine of Manchester read a valuable paper on the distribution of bovine tuberculosis amongst the farms supplying Manchester with milk: 1,524 farms, scattered over 5,000 square miles, were investigated and mapped, and these maps made possible an inquiry into the effect of westerly winds on bovine tubercle. Exactly the same relation became obvious, and when only evidently fully exposed farms were compared with evidently fully sheltered farms, the exposed were found to have about four times as much tuberculosis amongst the cattle as the sheltered.

So much for the influence of these winds on the incidence of phthisis. Now for their effect upon the fate of those who have contracted the disease.

Effect on Phthisis Patients.

It might be reasonably surmised that the effect of these winds on phthisis patients would not be favourable. All the great phthisis health resorts which have been conspicuously successful have been situated in pronounced shelter from prevalent strong rain-bearing winds; and the comparative failure of English sanatoriums may be explained by the blind placing of them, on German advice, in all sorts of unsuitable conditions, too commonly in westerly wind exposed localities. But surmise is not enough. The matter is too serious.

Duration of Cases.

Dr. Harper's figures afforded me in 1912 the opportunity of investigating the stated "durations" of female cases in shelter and exposure. He was good enough to have the recorded durations attached to his cases, and I divided these into three categories—namely, "long cases," lasting fifteen months or more; "medium cases," lasting between ten and fourteen months; and "short cases," lasting nine months or less. The result was so suggestive that I proceeded at once to treat two other quite different areas similarly. Dr. Young kindly obtained the durations of the cases in the parishes of Okehampton district. Here I classified the durations somewhat differently. Then I examined the durations in the parishes about Budleigh Salterton, and obtained similar results.

All these three areas showed the same effect of the winds. In all three the exposed parishes had a higher proportion of "short cases" and a lower proportion of "long cases" than the sheltered parishes. It might have been objected that recorded durations of cases cannot be fully relied on. But to this it may be replied that it is very unlikely that the errors supposed would by mere chance tell in the same direction in the records from all three areas; also that there is, after all, no real ground for assuming the presence of such errors as would invalidate the results. Now, however, we can proceed to a much more incontrovertible mode of inquiry.

Effects on Early Cases.

Thanks to the recent tuberculosis regulations, it is now easy to mark on the map the exact location of the dwellings of phthisis patients, and to follow their fortunes through a sufficient number of years. For the application of the new method which I am about to describe I am indebted to the great kindness of my friends, Dr. Adkins, medical officer of health for the County of Devon, and the tuberculosis officers for the county.

Method of the Following Inquiries.

Let me explain precisely the plan on which we have proceeded. Lists were first drawn up of *early (Grade 1) cases of phthisis which had passed through a sanatorium* (in practically all cases Hawkmoor Sanatorium) *and had been observed individually for four years afterwards.* These cases have been classified as "male" and "female," "with tubercle bacilli found," and "without tubercle bacilli found"; and at the end of four years as "dead," "arrested," and "living"—that is, not arrested. The exact position of the dwelling in each case during the four years has been marked by a dot on a Bartholomew's reduced survey coloured contour map (the well known touring map), and to each dot has been attached signs showing the classes to which the case belongs, as well as its exposure to or shelter from all winds between N.N.W. and S.S.W. The signs used have been M. = male, F. = female, + = tubercle bacilli present, − = tubercle bacilli not found, D. = dead, A. = arrested, L. = living but not arrested, S. = sheltered from all westerly winds, X = exposed to any or all of these winds.

As regards "shelter" and "exposure," I have found in long practice that 100 ft. of altitude shelters half a mile to the leeward of it well, and a further half-mile fairly. Beyond a mile from the 100 ft. its shelter must be regarded as ceasing, and dwellings situated further off will be exposed. I am sure that the only satisfactory method of assessing "shelter" and "exposure" is by measurement on the map. No other method can be checked by outsiders. No other method is so free from fallacy. It is, moreover, the method which I have hitherto used in my work. Lastly, it makes an inquiry possible which would be utterly impossible to undertake by local investigation of sites.

In dealing with these new figures I think it may be prudent to lay most stress on the female cases, which have formed the basis of all my former work in Devon. For we know that the occupations of the women are more uniform than those of the men; and (what is even more important in this inquiry) these occupations keep the women mostly in the immediate vicinity of their dwellings, whereas those of the men not uncommonly take them into quite different localities.

Grade 1 Sanatorium Cases in Devon.

The first figures which I shall show you are those from East Devon and from North Devon. The assessment of cases in South Devon has presented exceptional difficulty as regards shelter and exposure, and Dr. Ward has preferred to withdraw them for the present. The figures for East Devon were assessed jointly by Dr. Galbraith and myself. Those for North Devon were mostly assessed by Dr. Swan, my only notable interference being to insert two arrests in exposure, which we had overlooked—an interference by no means in the interests of what might be supposed to be my expectations.

Table I.—*East Devon.*

Sanatorium Cases: First Stage: Four Years' Observation.

	Exposed	Sheltered.		Exposed	Sheltered.
Dead:			***Mortalities:***		
Males ...	9 (7)	0	Males	56%	0
Females ...	3 (1)	2 (2)	Females ...	33%	7%
			All cases ...	48%	4%
Arrested:			All T.B. cases	72%	33%
Males ...	0	7			
Females ...	3	22 (1)	***Arrests:***		
			Males	0	29%
Living:			Females ...	33%	81%
Males ...	7 (2)	17 (2)	All cases ...	12%	57%
Females ...	3 (1)	3 (1)	All T.B. cases	0	16%

TABLE II.—*North Devon.*

Sanatorium Cases: First Stage: Four Years' Observation.

	Exposed	Sheltered.		Exposed	Sheltered.
Dead:			*Mortalities:*		
Males ...	11 (9)	0	Males	52%	0
Females ...	4 (2)	0	Females ...	30%	0
Arrested:			All cases ...	44%	0
Males ...	3 (2)	7 (2)	All T.B. cases	52%	0
Females ...	3 (2)	3 (1)	*Arrests:*		
Living:			Males	14%	70%
Males ...	7 (4)	3 (1)	Females ...	23%	60%
Females ...	6 (2)	2	All cases ...	17%	66%
			All T.B. cases	19%	50%

INDEPENDENT INQUIRIES.

Grade 1 Sanatorium Cases in Other Counties.

1. *West Shropshire.*—From Shropshire I have just received the results of the first independent inquiry made on these lines. Dr. Watkin, one of the county of Shropshire tuberculosis officers, has most kindly investigated the West Shropshire area, as being the area affording the greatest contrasts in that county between shelter and exposure. It will be seen that his figures (Table III) fully confirm those which we have obtained in this county. Although, as he points out, the numbers of cases are small, I would emphasize the importance of this entirely independent confirmation.

TABLE III.—*West Shropshire.*

Sanatorium Cases: First Stage: Four Years' Observation.

	Exposed	Sheltered.		Exposed	Sheltered.
Dead:			*Mortalities:*		
Males ...	9 (7)	1 (1)	Males	31%	8%
Females ...	7 (5)	1 (1)	Females ...	29%	14%
Arrested:			All cases ...	30%	10.5%
Males ...	9 (1)	5 (1)	All T.B. cases	54%	25%
Females ...	8 (1)	4	*Arrests:*		
Living:			Males	31%	41%
Males ...	11 (6)	6 (4)	Females ...	33%	57%
Females ...	9 (2)	2 (1)	All cases ...	32%	47%
			All T.B. cases	9%	14%

2. *Derbyshire.*—In Derbyshire it has been impossible to carry out the method in its entirety, but the medical superintendent of the county sanatorium has most kindly sent me the results of two years' observation of Grade 1 patients, dividing the county into three districts, distinguished by differences in their rainfall. Now rainfall *per se* has practically no effect on phthisis mortality. And a glance at the maps, which Dr. Barwise, the medical officer of health for Derbyshire, has very kindly sent me, shows that the north-west area is pre-eminently the most exposed to wet winds. The table of mortalities is here again most instructive.

TABLE IV.—*County of Derby.*

Sanatorium Cases, Male and Female: First Stage: Two Years' Observation. Discharged 1920; Condition 1922.

District.	Dead.	Arrested.	Living.	(Untraced.)
A. *North-west District* (40 50 in. rain):				
Tubercle bacilli + ...	1	11	6	(9)
Tubercle bacilli − ...	1	10	3	(7)
B. *Middle District* (30-40 in. rain):				
Tubercle bacilli + ...	0	3	0	(2)
Tubercle bacilli − ...	0	16	4	(7)
C. *South-east District* (under 30 in. rain):				
Tubercle bacilli + ...	0	12	2	(10)
Tubercle bacilli − ...	0	40	13	(22)

Mortality of (all) Traced Cases (taking T.B. + and T.B. − together).—District A, 6 per cent.; District B, 0; District C, 0. Mortality of T.B. + cases in District A = 5 per cent.

I hope to receive later on the results from other counties which have also been good enough to undertake similar investigations.

PRINCIPLE OF "APPROXIMATE ISOLATION OF INFLUENCES."

In all further investigation of this subject I am sure it is essential to bear in mind the principle I have ventured to lay down, of the "approximate isolation of influences." Until Koch devised a means for the isolation of micro-organisms no precise work on bacteriology was possible. That was a complete isolation. The isolation of influences in climatology can only be approximate. But the additional precision given to results by such approximate isolation will be instantly realized by anyone who carries it out. By such approximate isolation I mean not merely the happy-go-lucky elimination of this or that influence in the investigation of a third, but the systematic enumeration of all the known influences which seem to affect the field of inquiry besides the influence in question, and their successive elimination from the problem in one way or another, so far as that is possible. The process naturally is neither easy nor short. For illustrations of its use I must refer you to my former publications.

SOME MISAPPREHENSIONS.

There are some misapprehensions still needing notice, because still causing confusion.

First, there are some people who imagine that my work in England concerns only the south-west wind. It concerns all westerly winds, which in England are the prevalent, strong, rain-bearing winds. In other parts of the world other winds are concerned. In Mid-Europe the predominant wet wind is the north-west. In South Europe the south-east has also to be taken into account. In all Europe, however, west and south-west winds must be always considered. In Japan the north-west is the main wet wind. In the tropics there are the Trades, which are easterly. *Everywhere the formula to remember is "prevalent, strong, rain-bearing wind."*

Again, Dr. Haviland's work is still confused with mine. To Haviland is unquestionably due the credit of first perceiving that "wind" affects phthisis. But, so far from being a "follower of Haviland," I was fortunately quite unaware of his work until I found the fact on which I lay such stress. Haviland's statements were quite different from mine, and, had I been familiar with them, it is not unlikely that I should have missed my point, as he did. Naturally, when my own work brought me to hear of his, I acquainted myself with it. The point I here insist on is not the always slightly absurd point of personal priority, but the vitally essential point of *difference*.

CONCLUSION.

We have thus before us, ladies and gentlemen, a mass of diverse evidence, all clearly pointing to one and the same thing—a profound influence exerted upon phthisis by prevalent, strong, rain-bearing winds, affecting both its incidence and its course.

In respect of incidence, no mere climatic factor has so powerful an effect (a fact whose further proofs would take too long to relate this afternoon), and amongst social factors only occupation equals it in importance. We may safely say that the chance of becoming phthisical is *at least twice as great in exposure to these winds as it is in shelter from them.*

As regards course, it may be fairly said that the chance of recovery *is at least twice as great in shelter from these winds as it is in exposure to them*, and that therefore *there is no detail of treatment more vitally important to the patient than the placing of him in effective shelter.*

In closing I would thank most cordially those Devonshire friends, already named, who have done so much, with their encouragement and co-operation, to make this story possible; also outside Devon, Dr. F. J. H. Coutts, senior medical officer to the Ministry of Health; Dr. J. Wheatley, medical officer of health for Shropshire; and Dr. S. Barwise, medical officer of health for Derbyshire, for their valued interest and assistance; also Dr. A. C. Watkin for the great trouble he has taken in West Shropshire to procure me his independent results, and the medical superintendent of the Derbyshire Sanatorium for the figures he has sent me in spite of much pressure of work. To Dr. John Brownlee, Director of Statistics to the National Medical Research Committee, I would also express my deep indebtedness; the subject owes much to his initiative and skill.

The Bradshaw Lecture

ON THE

PREVENTION OF ACUTE RHEUMATISM.

DELIVERED AT THE ROYAL COLLEGE OF PHYSICIANS, LONDON, NOVEMBER 4TH, 1924,

BY

F. JOHN POYNTON, M.D., F.R.C.P.LOND.,

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THE prevention of acute rheumatism is faced with many difficulties, and I think the more closely it is studied the more apparent these become.

1. The first of these difficulties is nomenclature, for acute rheumatism may be the most insidious of maladies. Yet if we leave out "acute" and use the term "rheumatism" we are at once overwhelmed by the various disorders with which we are confronted, and if we abandon the term "rheumatism" altogether we shall have great difficulty in finding a substitute. It is when the prevention of acute rheumatism is entertained upon a great scale that this weakness in the nomenclature becomes of practical importance.

2. The next difficulty is concerned with the etiology of acute rheumatism considered as an infective disease. This view of the causation has a most important bearing upon the possibilities of prevention, but is at present in a state of uncertainty. When, in 1898, I first became associated with my faithful and valuable colleague Dr. Alexander Paine, Dr. Cheadle had already enunciated the clinical reasons for suspecting that acute rheumatism was due to some infective process. At the moment the whole question is being reinvestigated, and I believe I shall not be wrong if I put the present position somewhat thus: that many of those who have given the most attention to the subject recognize the importance of the strepto-diplococcus, but do not think that it affords a complete explanation of the etiology, and would look elsewhere for this—to some filter-passer, for example. Neither do I look upon this micrococcus as a complete explanation, but I do not anticipate the discovery of another infective agent. I look for help from the unravelling of the tangled skein of the secondary factors which combine with the micrococcus to produce this specific disease. Until the solution is revealed I feel, with the utmost respect for my able opponents, that I have caught something of the spirit which inspired Giordano Bruno to reply to the sentence of his inquisitors: "Majori forsitan cum timore in me sententiam dicitis quam ego accipiam."

3. In any case, even if we admit that acute rheumatism is due to a specific infection, we find ourselves confronted by further problems, among which are the many factors predisposing to the infection—such as heredity, environment, and nerve strain.

4. Again, our conception of the disease is still deficient in two particular directions: we have very little accurate knowledge either of the life-history of such an infection when once it has gained access to the human frame, or of the influence of the tissue characteristics and habits of the patient upon its course. On this account I have always connected with any scheme for the prevention of acute rheumatism the provision in such for opportunities for research.

5. The varied symptoms of the disease dependent upon the various important organs attacked constitute yet another difficulty, though one which must steadily diminish with increasing knowledge, and which will be met by careful medical instruction and by the gradual education of the public.

6. Then there is the difficulty of treating this disease with success, and upon this point, so far as children are concerned, I unfortunately find myself at variance with many able physicians. Except for the relief of pain, my experience as to sodium salicylate and other members of that group has been so unsatisfactory that I have no hesitation in stating that in the most formidable cases of carditis in the young my best results have been obtained without their use. Until, then, some new remedy is discovered or some additional assistance to these drugs I feel that we have little direct control over the course of acute rheumatism.

Reasons for Attempting Prevention.

It may be asked whether it is not premature, in the face of so many difficulties, to enter upon elaborate attempts at prevention; but to this I believe we may safely answer "No," and for these reasons: It is generally admitted that acute rheumatism is a cause of three disorders of national importance: first and foremost, organic heart disease; secondly, chorea; and thirdly, arthritis and fibrositis. It is not a rare disease but a frequent one, and the heart lesions, chorea, and arthritis are common manifestations. It is much more rife in the poorer classes, and this can only mean that hidden in the complex problem of poverty are some of the important factors in the determination of the incidence of the disease; and the study of poverty with a view to its amelioration is undoubtedly a function of a civilized country. Again, it is a disease which certainly responds to careful supervision and treatment, and there are at the present time flaws in our supervision capable of at least considerable mending. Lastly, it is not a disease of the old and failing, which would be, I admit, a sufficient evil, but it is one that kills and maims children and young adults, damages useful citizenship, and wastes much money spent on education. This is well illustrated in an inquiry by Dr. H. A. Chadwick into the nature of 140 fatal cases of acquired heart disease in children all under 12 years of age. In 89 the heart disease was rheumatic, whereas the next in order of frequency, the pneumococcic, numbered only 27.

A recent Blue Book on the subject of the "Incidence of rheumatic diseases" in its quiet pages supports all the statements I have just made. This Blue Book I have heard criticized in a way which I can perhaps best express by likening it to one of those strange dishes which appear at intervals in schools, and which is supposed to contain the odd fragments left from many and various meals covered in, not by blue paper, but by a pie-crust. For my part I have no criticism to make, but look upon it as a document of first importance, for it brings home two essential truths: The first, the great national importance of rheumatism. The second, the formidable difficulties that confront us in dealing with the problem, for I am convinced that when efforts for the prevention of acute rheumatism are made upon a large scale, those concerned more closely with the aspect of investigation will certainly find themselves perplexed as to where the lines are to be clearly drawn between the various forms of "rheumatism." This Blue Book does great service in pointing out the morass of "rheumatism," and it remains for investigators to make paths through this sufficiently broad and safe to enable the medical profession and public to see how far attempts at prevention can be made sane and practical. Any scheme to be successful must appeal to the public as well as the medical profession as a reasonable proposition.

The Medical Practitioner.

In the prevention of acute rheumatism it is clear that the doctor in general practice must, as in all the great problems of preventive medicine, take a prominent and essential part—not only in early diagnosis and treatment, but in the supervision of those who have suffered from the results of the disease. To their further activities I will allude later on in this lecture; but it is not too much to say that if this branch of our profession failed us—which is not thinkable—the whole fabric of prevention would be unsound at its foundations. The responsibility for adequate training in the clinical and pathological aspects of the disease rests with the great teaching centres. To them we must look for rousing in the minds of future practitioners an enthusiasm for the great opportunities they would have for helping to make a success of a scheme which holds out such great possibilities.

The Hospitals.

Our hospitals, and in particular the children's hospitals and the children's departments in the general ones, would in any scheme hold, I presume, the same position they do now, in that they would receive the acute cases and any which required particular observation or investigation. They would also carry out the training of the undergraduate students in the recognition of the disease and its manifestations, and the methods of prevention and immediate treatment. The notes of the cases, which will often be concerned with first attacks, should clearly become of great value for future reference and of increasing importance in any large undertaking for prevention. The out-patient departments of hospitals would be mainly consultative. They would in the poorer cases take the place of the general practitioner as supervisor, but their most essential functions would lie in deciding a difficult diagnosis, in admitting to the hospital, and advising doctors and patients as to the best procedures at the moment. Experience shows me that it is not satisfactory to bring many of these delicate children by train, tram, and tube, to wait about in hospitals during the winter and early spring months. The parents, too, are placed in a difficult position, for they naturally cannot exactly judge whether such a child is fit to travel, and yet fear to lose their appointment at the hospital. A system, too, which converts a hospital physician into a human turnstile to aid hospital grants is intrinsically unsound.

We are now met by a weak point in our management. It is common knowledge that recovery from acute rheumatism is often slow, and that neither cardiac inflammation nor chorea is a condition suited to ordinary convalescent homes. These children are notoriously unstable, the rheumatic infection admittedly treacherous, and to group them with strong children recovering from surgical injuries, a passing debility, or a rapid pneumonia, so unsatisfactory that physicians are well aware of the dangers. The alternatives are to keep them in a sick-ward in the middle of a great town, or to send them home.

When hospitals fulfil the intentions of their philanthropic benefactors, in treating the children of the necessitous poor, many must be sent back to entirely wrong surroundings. The weakness, then, in the present position is two-fold: we are not doing the best for our rheumatic patients, and we are using beds in expensive institutions which are required for urgent or obscure cases.

Recovery Hospitals.

Each year it is becoming more evident that the great cities, and London in particular, require *recovery hospitals* in the adjacent country in vital touch with the mother hospitals. Should public opinion in the future favour a step in this direction, you will appreciate that two alternatives arise: either such hospitals will be *special* and in this case devoted to the rheumatic, or be *general* with a special section for the rheumatic. I favour the latter, but would naturally accept the former as a step in advance of the present position.

In an ideal hospital of this type the cases would have the necessary time for convalescence, would, in the surrounding grounds, be trained for physical exertion, and eventually classified according to their ultimate degree of recovery, and they would also—a point of great importance—continue their education. The history of acute rheumatism would be continued in a sequel to the first hospital notes, and eventually the children returned to their parents with a short practical statement as to their capabilities.

There would be one link in this chain which must require the most careful consideration, for it is essential. There must be an intimate and vital connexion between the parent and recovery hospital. If the latter once drifts into a second-rate, soulless abode for "uninteresting cases" its value is lost and it becomes a monument of inefficiency. This danger, when once realized, can certainly be prevented by organization if our profession so determines.

Pioneer attempts have already been made in this country—as, for example, at the Edgar Lee Home (Stonebridge Park), Broadstairs; at the Chiene Hospital; in Birmingham and at Bristol, and doubtless elsewhere. The Invalid Children's Aid Association, in particular, has taken a prominent part in this movement, and has recently started a home of fifty beds for females up to 14 years and males to 7 years of age at Hartfield in Sussex. I have the honour to be one of the honorary visiting officers, and though it is too soon to make a report on progress, for we have not been through a winter, I may remark that at present the results are encouraging. The gains in weight, the absence of attacks of rheumatism, the improved physique, and happiness of the children, who are continuing their education and living and sleeping practically in the open air, make me hopeful that we are entering upon a real advance in the treatment of rheumatic heart disease. To those who have given their time and skill in these pioneer efforts I feel deeply grateful.

OFFICIAL MEDICAL SUPERVISION.

Leaving now the part played by hospitals I come to the far-reaching activities of the Ministry of Health, Board of Education, and medical officers in the London County Council schools. Hidden away in their not superficially attractive reports there are some of the most fascinating chapters in modern medicine; which leads me to confess that I have hardly done justice to my colleagues in these great departments—a lapse which I take this opportunity to correct.

Infant Welfare.

There is already, as you are well aware, considerable medical supervision in this country. During the first years of life we have the infant welfare centres; from 5 to 14 years the school medical officers; and from 16 years onwards the national insurance. There are two breaks in complete continuity—one between the second and fifth years and the other between the fourteenth and sixteenth years. The break between the second and fifth years—which in theory does not exist but in practice does—will doubtless eventually be bridged and already is encroached upon on the one side by the infant welfare organization and on the other by the school authorities.

I have given considerable time and attention to the subject of acute rheumatism under 5 years of age, and, though I am not implying that the disease is frequent then, I am sure that it occurs more often than is generally suspected, and that it is liable in these early years to cause great damage to the heart. Supervision between 2 and 5 years should eventually throw light on the earliest phases of the disease.

School Medical Service.

The period of school life is by far the most important in the history of acute rheumatism in this country. The incidence of the disease rises rapidly after the fifth year to about the tenth, and chorea, which I have seen as early as 9 months, and occasionally in the second year, comes now to the front. It follows that the school medical service must take an ever-increasing share in the problem of prevention. This becomes apparent if we study a report of the chief medical officer devoted to heart disease and rheumatism in 1912. In this we are at once impressed by the vast number of children dealt with, the importance of organic heart disease as a factor of ill health, and by the frequency of acute rheumatism as its cause. Already there the importance of prevention is realized, as also the following up of cases, the need for precaution on return to school, and the possibilities of residential schools.

The appearance of chorea during the school age demands, I think, special attention. I shall not delay with statistics showing that it is a rheumatic manifestation: I have myself made four analyses, each from a different source, which convince me of the essential truth. This manifestation is a most interesting one, for, on account of the peculiar movements, it becomes the most sensitive clinical index we have of active rheumatism; it is also the manifestation which most frequently occurs alone, and it has a most striking sex incidence. Accordingly, the study of the course of chorea gives us a very fair insight into the

general behaviour of acute rheumatism; thus we see acute attacks which terminate rapidly, and we see cases which linger on for some months and are continually recurring. As many as six attacks may be recorded in a few years, and some children between attacks are never quite free from the effects and may be thought mentally deficient. We recognize two elements—the infective and the nervous. There is no doubt that nervous tissue is slow in recovering from its injury even after an active infection has been destroyed, but when we recall that repeated chorea is a frequent indication of an early mitral stenosis, we suspect that both these lesions are pre-eminently the result of the *smouldering activity* of infection.

I see in chorea the danger of a great national system of education framed by adults for delicate, sensitive rheumatic children. Do not suppose that I am hinting at harshness or cruelty on the part of the teachers—that I dismiss at once; but the process of education begins very young, and the routine is a strain upon constitutions of which we may truly say "the spirit indeed is willing, but the flesh is weak." The rheumatic child is bright and eager, but cannot last the course, for she is lacking in stamina. Routine on the one hand and a constitution that requires frequent rests on the other must clash, and not infrequently does—for example, over scholarships. I believe there is a gradual lowering in general vitality, and then the infection attacks first the nervous system, which is the most strained, and often also the heart and other organs.

For my part, seeing the frequency of chorea in London children (9 per cent. of the out-of-school children in 1923), I would not leave one stone unturned until either, on the one hand, I proved that the view I held was a bogy, and that other causes to account for its frequency must be discovered, or that, if it was mainly correct, steps were taken to analyse the exact nature of the educational strain.

There is a passage in the report of the chief medical officer of the Board of Education which deserves particular attention. It comes from a report in 1923 of the consultative committee on the differentiation of the curricula for boys and girls respectively in secondary schools. This committee draws attention to the present danger to health connected with the strain of examinations and of accomplishments added to the boys' curricula, and they note the relatively heavy household duties devolving at this age on many girls. I see in this passage light for the future and a sense of the reality of things, which cheers me almost as much as the sight of a flowering shrub upon the walls of one of those gaunt buildings with which we are so familiar.

Early Adolescence.

Still keeping our attention to the official side of the medical problems, we come now to the age of early adolescence—14 to 16 years—and to the time when the child leaves the supervision of the school medical officer and has the choice of occupation immediately ahead. Everyone recognizes that this is a critical period in life, and it is unfortunate that just at this time there is a break in the continuity of official supervision. The school medical officer is left and the national insurance has not begun. I am not in a position, nor have I the time, to enter into details of the difficulties surrounding this gap, but will try to indicate the present position.

The inspections of the school medical officer are concerned with three groups of children: the "entrants" to the school; those between 7 and 8 years; and lastly, the "leavers." The leavers' examination may take place one or two years before leaving, and there is often available medical information extending over nine years of school life. These histories are strictly confidential, but they are available for the use of juvenile employment bureaux, who are concerned with placing in employment children who leave at 14 years. Again, in the case of children continuing their scholastic career in schools for higher education and children suffering from severe physical defects up to 16 years, the school medical service is available, but as you are aware the number of such children is very limited.

Factory Surgeons.

We come now to the factory surgeons, some of whom are school medical officers and all of whom are encouraged by Sir George Newman to co-operate closely with those officers. These examine adolescents of 16 years entering factory life, and those under that age who enter employment, including certain specified workshops, which requires an earlier training. When, however, we consider the problem of the London children we find many enter occupations which do not require a certificate of fitness. This is a weak link in the chain, and perhaps the more apparent because some three years ago the gap between 14 and 16 years was practically closed by the day continuation schools. The axe, however, fell, cutting through this slender neck, and the young head of the school medical period tumbled into the basket of economy.

The report of the Departmental Committee issued this year shows, moreover, that the Factory Act has not proved satisfactory. In 1920 it was found that nearly 8,000 individuals were rejected in the United Kingdom by the factory surgeons on medical grounds, and 576 of these for diseases of the heart and lungs. This clearly points to some leakage in the period between leaving school and applying for factory employment. We must bear in mind that this Act does not require co-operation between the school medical service and their reports and the local authorities and their reports on the one hand, and the factory surgeons on the other. Valuable suggestions for strengthening this weak link have been made by the Committee, which from my point of view are also links in the prevention of acute rheumatism. The phase of that problem which is mostly affected by such improvements will concern individuals who have already had attacks of rheumatism and have probably some damage to their heart, for, though first attacks occur between 14 and 16 years of age, it is the recurrences that are more frequent. I should, perhaps, at this point say that I include in the prevention of acute rheumatism the sequelae, because I believe at present no practical line can be drawn between active infection and improper strain thrown upon a damaged organ. In children, certainly, some active infection is usually the secret of most cardiac breakdowns.

We see from this short outline of the official side of the medical problem that one of its most important duties is akin to that of the signalmen on our railway lines—at certain stages along the line of life these officials indicate danger and pull up the train. The medical practitioners and hospitals clear the track and endeavour to prevent further breakdowns.

Works' Doctors.

There is another link, and one of increasing value, in the chain of prevention. This is the appointment by many large industrial concerns of special medical officers, matrons, and nurses, to supervise the health of their staffs. There cannot be any doubt that this link, forged though it may be on the anvil of strict business by the hammer of self-defence, must do great good, particularly when that service is far-seeing and kindly. If we are to prevent acute rheumatism and minimize its dangers it is essential, especially for the young, that we should be able to come to their assistance quickly and not allow them to drift on until they are brought by grave illness to a standstill. The very existence of such a medical service, in touch with capital on the one side and labour on the other, must eventually help greatly in the development of any scheme for prevention.

The General Practitioners.

As I have already stated, throughout early life the doctor in general practice is taking an unobtrusive yet important part in attending rheumatic children, but, as Dr. Carey Coombs has suggested, they could offer more special assistance by the formation of voluntary groups in various districts around some great city. In this way some point under investigation in the city hospital, such as the incidence of the disease in certain areas or the appearance of a local epidemic, would enable them to use their special knowledge and experience. We must remember that limitations of time necessarily make the great store of clinical experience in this branch of our profession difficult to call upon, but this

suggestion by Dr. Coombs would, I am sure, give them this opportunity and be most helpful in extending our accurate knowledge. When the insurance age is reached, and indeed in every stage of life, the general practitioners who give time, opportunity, and interest to this particular subject can continue to furnish valuable data not to be otherwise obtained. The British Medical Association, alive to the importance of the problem, which was brought before it in 1923 in a valuable discussion opened by Dr. R. Miller, has already taken steps to lend assistance in advancing our general knowledge.

Increased Co-operation.

I must here make a short digression to touch upon a somewhat delicate subject, on account of which my remarks must be looked upon as an expression of a purely personal view.

Taking a broad outlook there are three great medical forces in this country: the hospitals, with a magnificent history of past and present work, but financially unstable; the Ministry of Health, young and powerful, with immense resources and advantages; and the general practitioners, with the all-important assets of experience of the dawn of disease and intimate acquaintance with their patients. Each can take a most valuable part in the prevention of acute rheumatism, but greater results are to be expected if these forces can be drawn closer together. Greater organization between them would, in my opinion, enhance the value of the school medical service, which appears to me often to be in the position of a doctor whose patient has been under a consultant's care and returned to him without a note of guidance. Looking to the future for one of these forces I can only see one fate, and this is that the hospitals become the strong right arm of the Ministry of Health. I use the word "strong" advisedly, for to be strong there must be wide liberty of thought and action, and not the suffocating growth of "officialism."

This digression is not intended to be controversial, but has, I think, a distinct bearing on the subject of this lecture. For my part, I should like to see skilled officers, somewhat on the lines of our hospital medical registrars, but representatives of the Ministry of Health, linking up the cases and notes of the rheumatic patients in our hospitals with those of the school medical officers, and bringing to us hospital physicians the particular lines of thought and investigation under the consideration of the Ministry, and in turn keeping the latter in intimate touch with hospital activities. In another direction also there are great possibilities, and that is in the co-operation of hospitals and almoners with the Board of Education and their army of voluntary workers and the Child Care Committees. The importance of this co-operation is, I believe, appreciated at some of our hospitals and should be of particular value; and these organizers, by bringing the activities of the hospitals into touch with the outer world of medical service, could widen the horizon of the student and indeed of all of us. From the standpoint of the rheumatic children they would give great assistance in following up these cases when they leave the hospitals and keeping in closer touch with them. At the Hospital for Sick Children already I have had valuable continuation histories and home details of my rheumatic cases supplied by this agency. In the common aim at the prevention of acute rheumatism I see a good opportunity to bring the three great medical forces in this country closer together, and in this direction further possibilities for prevention.

Environment.

The influence of environment upon the incidence of acute rheumatism is one of the problems in prevention which appears to me particularly to need more extensive investigation. This aspect is one which I always associate with the honoured name of Sir A. Newsholme, who showed us the importance of urban life as a factor in causation. My personal experience of this side of the problem is not an effectual one, because my activities have been confined to technical research and clinical study in hospitals, but I have noticed these points. Damp and cold houses and districts tend to make acute rheumatism drift into a chronic course, and it is my belief that a child returning from hospital, after an attack, to such surroundings is certainly in great danger of chronic invalidism and likely to die in a few years. Whether or not this is the entire explanation I am convinced that there are houses which are most injurious to such children; this is based on my knowledge of healthy families coming to such houses and several members developing acute rheumatism, which also recurred when they returned after convalescence. I am also most suspicious of cold winds when there has been a spell of hot weather and much dust in the towns, this combination producing tonsillitis and increasing the incidence of acute rheumatism. The medical officers of health would have a prominent part in this investigation, and already to my knowledge they are taking the problem in hand, and the Care Committees should prove invaluable.

Notification.

Here the question arises as to notification, and it seems to me that a suggestion I have heard is worthy of consideration. It is that a partial and temporary notification might be helpful. General notification in the present state of our knowledge would probably lead only to great expense and confusion. It might, however, be advisable to notify acute heart disease in childhood, or chorea, or obvious cases of acute rheumatism up to a certain age and for a limited time, and I understand that the medical officers of health would thereby be put in a stronger position. Personally, I am not sure that notification is needful or for the best, and leave it as an open question.

Contagion is an aspect which at present I should not care to be brought into prominence, believing that it does not take an important part in the history of acute rheumatism. An epidemic of sore throat in a household predisposed to the disease might result in several members developing active symptoms, and I have met with cases in these circumstances sleeping in the same bed, one of whom developed cardiac rheumatism, the other chorea; but these are very exceptional events. There are occasionally outbreaks in strictly limited areas, and in 1919-20 around and in London there was a distinct wave of increase of incidence. This feature is one which certainly requires more study, but I think it would be premature to bring contagion to the fore in any public movement.

Education of the Public.

Two directions suggest themselves by which we can better instruct the public: the first, by educational leaflets and lectures to bring home to parents, patients, teachers, and labour employers the dangers of the disease; and the second, to assist them in choosing industrial occupations and in recognizing the limitations of employees who have been partially maimed by acute rheumatism.

The Ministry of Health could, I believe, render a great service if it would publish a leaflet for the guidance of the public, setting out in simple terms the dangers of acute rheumatism, together with some simple instructions. These could be sent to hospitals, to medical services, to great factories, and wherever from its special experience it would think helpful. I have ventured myself to outline such a leaflet, and I know it has been of some value, but this would be better done by those more experienced in the practical needs of the public. In the other direction—the assistance of the public in the problem of employment—we require the best possible organization for providing information for the guidance of those who have rheumatic children to place in life. Schedules of suitable employments should be easily obtainable, and there is no doubt that in the future the deeper study of employment in relation to acute rheumatism and cardiac disabilities will give us much useful information. At present the school medical officers do valuable advisory work on these lines, but more can probably be done to gain the assistance and sympathy of employers. It certainly should become increasingly difficult for such a case to occur as recently came under my care. This was an undersized girl of 20 years with obvious mitral stenosis, who was working as a bottle labeller, underground, often in wet clothes, and lifting heavy cases. As a result she was admitted with a complete cardiac breakdown from which she has never recovered.

The Local Focus.

The next point is the removal of local focal infection as a factor in prevention. On June 7th, 1900, a man, age 28, came to St. Mary's Hospital suffering from a sore throat. The condition was one of acute tonsillitis and he had mitral and aortic disease, arthritis, and muscular pains. There was a previous attack of rheumatic fever four years before. Dr. Paine, by plate culture, isolated a strepto-diplococcus morphologically and culturally indistinguishable from that we had isolated from the lesions of acute rheumatism. Intravenous injections into a rabbit produced acute aortic and mitral endocarditis. Fitz-Meyer, two years later, by extensive experiments supported these results, and later with Mr. George Waugh we repeatedly verified the ability of this micrococcus obtained from unhealthy tonsils to produce cardiac and arthritic lesions without any previous injury to the valves. This was the birth of the local focus in rheumatism.

No one can be *more* convinced than I am that the rheumatic infection has one important site of entry into the system through diseased tonsils, and particularly those which resemble, in their deep lacunae, culture tubes. No one probably is *less* convinced than I that wholesale removal is indicated in the rheumatic child, or that the removal of the local focus shuts the door. Nature is not so easily managed, and I have seen severe carditis in a first attack occurring some years after a complete enucleation. Recent American statistics bear out this experience, for Ingerman and Wilson report that, of a series of cases in which tonsillectomy had been undertaken for rheumatic manifestations there occurred, in a period between one and eleven years after the operation, rheumatic relapses in 76 per cent. I look upon the tonsils as an important barrier; but as no man is more dangerous than a clever man who has lost his capacity, so are badly damaged tonsils a constant source of danger. Careful treatment of the throat, nasopharynx, and teeth in the prevention of acute rheumatism will be, in my opinion, a permanent factor. More investigation is required to determine other local foci as equally definite.

Research.

That further research is essential to advance the prevention of acute rheumatism is generally admitted, and this must mean the assistance of expert investigators trained in the modern methods of bacteriology, serology, and biochemistry. Opinions as to the best method for obtaining results will naturally differ, and I can but express my own views. I think there should be some institution in which the study of "rheumatism" should be continued uninterruptedly, and in a centre such as London I would have this institution concerned with the entire problem of rheumatic affections, for it is my experience that in research one is liable, if following a particular line, to reach a dead end; some fact or some technical detail is lacking or the brain becomes wearied. Then one needs to leave that line for a time and to work in other directions, returning later refreshed with new ideas or with new equipment. The problem of "rheumatism" would always have open spaces; now there might be fresh light thrown on malignant endocarditis, now a discovery in the bacteriology of rheumatoid arthritis, or some chemical advance bearing upon fibrositis. Thus the vitality of the research would be kept active.

I am no believer in an easy path. A keen intelligence even working on wrong lines will learn useful lessons and be the stronger, but one value in the establishment of a continuous research lies in the diminution of the likelihood that a young investigator would wander off the track for a long time. If I may give one personal illustration—Dr. Paine and I spent two years searching for a suspected bacillus and discarded the very micrococcus we eventually believed to be the causal agent of acute rheumatism. Two years is a long time, and wiser heads might have given us a hint that would have put us right earlier in this vain search. Such an institution could be organized for training investigators and putting them in touch with our great hospitals and infirmaries, and would have at hand an ample literature. I admit the scheme is ambitious, but I am looking ahead and outlining what appears to me the rational steps to bring about a steady progress in our knowledge, remembering always the great wastage of money that at present results from the ravages of rheumatism.

Conclusion.

I think that I have shown that we have in this country at least the skeleton of a valuable organization for the prevention of acute rheumatism. Given the *will* to clothe this skeleton with living flesh, there seems to me to be great possibilities. Dr. Carey Coombs very wisely points out that any scheme must be evolved slowly, and I am in entire agreement with him. It is my belief that the best results in most great endeavours are obtained by testing the strength and weakness of the materials already at hand rather than by wholesale revolution. I have attempted to disclose weak points, and these can be cautiously strengthened. No one would suppose that I should advocate filling the land with country hospitals, but *one* such connected with the children's hospitals in London would be an experiment justified by our knowledge of disease, and in this hospital acute rheumatism could form one section, and the results be carefully tested.

Of this I am convinced, that Sir George Newman and his powerful staffs will continue on their side to develop our resources for prevention, and the hospital staffs and practitioners are prepared to take their parts. It is for an enlightened public to consider whether they will help also, for it is for them and for their children that we are working. If we are met by the answer that there is no money for such endeavours, then we can but improve to the best of our ability, and by mutual organization, our present resources; but the public should realize how many children and adults in this country are maimed by this disease, and should know our difficulties, our need for research, and the present limitations of our resources.

In conclusion I would venture to repeat a prophecy I dared to give in 1913 in an address to the Invalid Children's Aid Association. "That as surely as I stood on the platform the time would come when the care of the rheumatic child would attract much more attention in this country"; and I would add now "in all civilized countries." I wish also in this lecture room, where the great name of Harvey has been so often glorified, to express my belief that the experimental production of organic heart affections by micrococci obtained from rheumatic carditis has opened up the road for a great advance in the treatment of cardiac disease and for the relief of much suffering, by leading our thoughts to the problem of the *prevention* of acute rheumatism.

SPIROCHAETOSIS ICTEROHAEMORRHAGICA.

The Presence of the Causal Organism in Slime as a Source of an Outbreak in East Lothian.

BY

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A preliminary note[1] recording the occurrence of this disease in Scotland was published in February, 1924. Since that time an extensive investigation has been in progress, and is still being continued.

At present it is desired to give an account of one aspect of the inquiry which led to the discovery of leptospiral organisms in a natural habitat hitherto unrecorded. The observation will no doubt be confirmed in other circumstances which are being investigated, but the existing conditions associated with the present finding alone may help to throw further light on the epidemiology of the disease, particularly in relation to its occurrence in certain coal mines.

In 1914 Inada and Ido discovered the causal organism of Weil's disease. They reported their discovery in a Japanese journal in 1915. An English communication by Inada, Ido, Hoki, Kaneko, and Ito,[2] which summarized the publications

in the Japanese literature on this subject, appeared in 1916. The disease was found to prevail in epidemic and endemic form in certain parts of Japan. In addition to the liability of butchers, cooks, and field workers to the disease in that country, they noted its frequency among coal-miners working in that part of a mine inundated with water. They also stated that "the spirochaetae seem to live in water and mud, and to invade the human body from there." A later communication by Ido and his associates[3] announced the finding of the specific organism in a certain proportion of rats caught on the surface and in infected pits.

Since the discovery of the causal organism the disease has been more widely recognized, and infected rats have invariably been considered one of the chief sources of infection in man. Toyama[4] later observed that the prevalence of Weil's disease was closely associated with conditions of the soil in Japan, and found that all infected districts were paddy fields and localities with swampy ground. Other observers have reported the presence of leptospiral organisms in water and mud, but the direct relationship of such water leptospiras to Weil's disease was not definitely established by animal experiment.

Nature and Result of the Investigation.

In the infected area in Scotland a considerable percentage of rats and field-mice was found to be infected with the pathogenic spirochaete, or leptospira (Noguchi). This fact having been established, the examination of surface and pit waters was indicated. This has been done on an extensive scale.

A personal visit to one of the infected coal mines was arranged by the county medical officer of health for East Lothian, Dr. G. Y. Richardson, who, by the kindness of the pit owner, received permission for an inspection in February of this year. It so happened that the mine visited was inundated with water in certain parts and was known as a "wet" pit. A large number of water samples was collected, by means of sterile glassware, from different sections of the mine. These samples included specimens from new cuttings where the miners were working practically under water, from recent workings which were very wet, and from old sections which may be termed damp in comparison with the other parts. It was in one of the old sections that the following observations were made which resulted in a finding of much significance.

Compared with other branches of the mine there was little ground water; no water was seen to drop from the roof, but the whole tunnel was very damp. Small stagnant, muddy pools were present from which samples were collected. Roof water was looked for in vain, but on holding a lamp close to the tunnel roof I noticed a slimy viscid substance, which formed a small thin layer only in certain areas. At parts it was seen to form hanging drops, which as they increased in size would no doubt fall into water or on to the ground. Other portions of the roof in the same section were merely damp with no slime, while in certain areas red sandstone drippings were present. The viscid substance was certainly not plentiful, and even the small amount collected was found only after careful search.

Wet films of the slime were first examined by dark-ground illumination, which revealed remarkable and varied forms of motile organisms, in addition to primitive forms of the vegetable kingdom. Different types of spirochaetes were distinguished by their morphology and motility. Only after prolonged examination were definite leptospiral organisms found, but they were few in number. The difficulty in recognizing this delicate organism in such a viscid substance may be emphasized.

To control the observation if possible, two guinea-pigs were inoculated intraperitoneally with 2 c.cm. of the glutinous material, thinned by the addition of a little saline to permit of its passage through a syringe needle. The result of these experiments was negative in both cases; no spirochaetosis developed during one month's observation.

A fresh sample of the roof slime from the same section of the mine was obtained at a later date. Dark-ground examination again showed the undoubted presence of typical leptospiras. Two guinea-pigs were again inoculated, but on this occasion with 4 c.cm. of the substance, as the failure to infect the first two was attributed to the scarcity of the leptospiras in the smaller amount injected. Both animals died, one on the eleventh, the other on the thirteenth day after inoculation. They showed equally pronounced evidence of spirochaetal jaundice. Abundant leptospiral organisms were present in all the organs examined, and an appreciable number were also found in the blood and urine. Notable features were the intensity of the jaundice, the prominence of the widespread subcutaneous, muscular, and internal haemorrhages, the enlargement of the spleen, and the haemorrhages in the stomach in both animals. In fact, the lesions appeared more pronounced than in many animals infected with the human or rat strains.

It would appear, as far as can be ascertained from the relevant literature consulted, that this is the first occasion on which the direct inoculation of a water leptospira has proved pathogenic to guinea-pigs. This infected roof slime was found growing on slaty stone and wooden roof-bars in absolute darkness. It was greyish-brown in colour, and translucent when free from carbon particles. It formed a mass of considerable coherence and was not very readily detached from the stone roof. The consistency approached that of a thick gum solution, and resembled the semi-solid culture medium of Noguchi used in growing leptospira. The temperature of the slime in the mine was 11.7° C. in February. It was slightly alkaline when tested with litmus paper, and had a reaction of pH=7.5 approximately.

As mentioned above, the leptospira was recognized with difficulty in this substance teeming with other active life. A few of them were much longer than those found in man, the rat, or in cultures. Other types of spirochaetes were much more numerous, particularly one species. The characteristic motility of the leptospira in contrast to that of the other spirochaetes present was striking, and formed a feature which distinguished them from forms closely resembling the genus. Most of the other spirochaetes on escaping from the slime were actively translatory and moved rapidly in a horizontal plane; whereas the true leptospira remained in the field actively rotating for a second or two, then finally burrowed vertically into the viscid medium out of sight. The leptospira was found to exist in this semi-solid medium symbiotically with algae, fungi, cocci, bacilli, spirochaetes, flagellates, nematodes, and their ova. This slimy substance was formed by organisms with a glutinous envelope which yielded a jelly-like or zoogloea mass

The continued existence of the leptospira and the other motile organisms was noted at different temperatures. Some tubes of slime were kept at room temperature, and others in the ice-chest for over five months. Dark-ground examination at the end of that time showed all the motile organisms, including leptospiras, quite recognizable and unimpaired in their activities. Animal inoculations were recently done to determine if the slime after keeping had maintained its infectivity. The results are not yet ready for publication.

It was previously noted that the slime was observed only in a very damp and old section of the mine; its situation on the roof appeared inaccessible to rats. I was informed by the pit manager that at the time of the outbreak of jaundice in May, 1923, practically all the miners affected were working in a particular section. This section was stated to have been the wettest part of the mine. Of much significance becomes the fact that this particular section happened to be that branch of the mine in which the infected roof slime was found. Eight miners developed symptoms of spirochaetal jaundice when engaged in the mine in question. Five of these were said to have fallen ill within a period of two weeks while working in this very wet cutting. Rats were never considered numerous in the pit, and an expert rat-catcher failed to trap any underground for examination, but caught one on the pit surface. This rat was found to be infected with pathogenic leptospira.

Discussion.

It is highly probable that such slime with leptospiras aggregated in it may infect by various routes. At the time of cutting into a new wet section existing slime in the soil

above may be dislodged by the force of movement of the ground water escaping into the pit. Miners locally, therefore, may be more exposed to infection at that time. After the flow of inrushing ground water has diminished, the soil above is less likely to be disturbed. At a later period elements of slime in water, oozing from the soil, may settle and grow on the roof to form a nidus for the growth of the leptospira and other organisms. This slime may possibly drop on to the ground, into stagnant pools, and running pit water, from which sources man and rat alike, locally and at a distance, may conceivably become infected. It may be, however, that the pathogenic leptospira escaping from this rich natural organic medium into running water, or water with little organic matter, becomes attenuated after residence in the less favourable environment, as do the human and rat strains in culture medium. There will be a wider distribution of the organism in infected water than in the slime, therefore dosage may be an important factor in infection. Conditions in the mine which may possibly influence the pathogenicity of the leptospira are darkness, temperature, and depth. The temperature of the slime in the mine was 3° C. higher than that of pumped water in a cement surface pond. No cases of jaundice appeared to be associated with either the pond or an adjacent stream into which the pond water flowed. These waters both showed the presence of certain spirochaetes, but no leptospiras were found in the centrifugalized deposits. Animal experiments with these and other surface waters have so far given negative results.

The opinion stated above, that the absence of favourable and adequate organic matter in the water may be a factor in the attenuation of a pathogenic leptospira, receives support at the time of writing. In an English version of Toyama's work[5] just published it is recorded that a pathogenic strain actually became attenuated in experimental ponds with no soil, but preserved its virulence for a longer period in ponds with soil. Moreover, it is stated that "the spirochaete could preserve its poisonous nature two months in an imitation paddy field, which had entirely no self-cleaning function." The organic properties of the soil and water in which the leptospira may exist as a pathogen would therefore seem to be a factor in the preservation of its virulence. That the presence of the associated organisms in the slime and soil may lower the resistance of man and experimental animals, and so act as aggressins, requires consideration, as advised by Dr. P. P. Laidlaw. A French writer inoculated large doses of impure cultures of a water leptospira into guinea-pigs with negative results.

Spirochaetes, now considered similar to the genus Leptospira by Noguchi, were observed in water by Wolbach and Binger[6] in 1914. They reported the isolation of a filtrable spirochaete from the shore of a fresh-water pond near Boston. Its pathogenicity for experimental animals was not tested. Several observers since then have recorded the occurrence of the same genus in water. Zuelzer,[7] in 1922, discovered in tap water spirochaetes which morphologically resembled those of Weil's disease. Direct inoculation of the naturally infected water into animals, however, did not give rise to any symptoms. One strain of a water leptospira proved pathogenic to guinea-pigs after cultivation in serum medium for one and a quarter years—that is, mutation from saprophyte to pathogen had apparently occurred. Stevenson (unpublished observation) found a leptospiral organism in London tap water, but no guinea-pig inoculations were carried out. Rats injected with the water gave negative results. Both fresh and salt water have been found by Noguchi[8] to contain leptospiras indistinguishable from those producing disease in man. The organisms did not prove to be pathogenic to guinea-pigs.

Small epidemics of spirochaetal jaundice occurred last autumn in Northern France, one of which was associated with the river Vesle, at Reims. A number of young people who bathed in the river contracted the disease. Etchegoin[9] examined the water and mud of the Vesle, and found a leptospiral organism which he considered had slightly wider elementary spirals than *Leptospira icterohaemorrhagiae*. The river water and mud, and massive doses of impure cultures of leptospira, were tested by animal inoculation, but did not produce spirochaetal jaundice.

It would thus seem that leptospiral organisms exist as saprophytes in certain waters and mud. The saprophytic and pathogenic forms are stated by most observers to be morphologically indistinguishable. Their close relationship in other directions has been demonstrated by Uhlenhuth and Zuelzer.[10] Mention of mutation from saprophyte to pathogen has already been made. Biological and immunological tests carried out by them support the view of the water origin of Weil's disease. On the other hand, Akira Shiga[11] recently recorded serological differences between certain water strains and *Leptospira icterohaemorrhagiae*. The latter is stated to thrive in the immune serums of the former, but not in its own immune serum. The two different races of water leptospira tested were likewise only affected by their homologous immune serum, both being uninfluenced by the immune serum of the pathogenic strain. They also proved the greater power of resistance of the water organisms to ultra-violet rays and other influences, but found no great difference in the behaviour of the saprophytic and pathogenic strains towards certain parasiticides.

It has not been possible so far to carry out comparative serological and certain other tests with the slime, rat, and human strains in the present investigation. The most important property of pathogenicity, however, has been proved by animal experiment to be common to the three strains. Natural habitats of the genus have been found in wet soil and in water. It remains to determine if varying natural environments alone can influence mutation from a pathogenic to a saprophytic type and vice versa, or if immutable species exist. The change from a virulent to an avirulent organism in altered natural conditions was suspected, and the view held finds confirmation in Toyama's work already quoted. No mention is made of a return of virulence on introducing the water-attenuated leptospira into wet soil again. In the outbreak investigated by the writer it was observed that no cases were associated with the surface pond or stream, both of which received pumped water, presumably containing some leptospiras, from the infected pit. The pond was lined with cement, contained little soil, and the temperature was 8° C.—factors possibly favouring attenuation. The stream was said to receive boiling water from mines near its banks. On the other hand, the change from saprophyte to pathogen in natural conditions has not been determined. A water saprophyte, however, was reported by Uhlenhuth and Zuelzer to have acquired pathogenic properties in culture medium.

The localization of the disease has been generally recognized, in spite of the presence of leptospiral organisms in many waters and rats in districts where the disease has not occurred. Epidemics have invariably been associated with wet and badly drained broken ground, as instanced by outbreaks among workers in rice fields and wet mines. During the war epidemics among soldiers were localized more or less to wet, ill drained trenches. The disease has also occurred among workers in sewers. In such environments conditions no doubt exist for the development of slime similar to that found in the mine. This slime medium apparently affords an ideal nidus for the growth and aggregation of pathogenic leptospiras. Apart from environment such as favourable wet soil and slime, the organism may become attenuated as mentioned above, which suggests a possible reason for the localization of the disease.

Swimming baths in the poorer quarters of Paris have been held responsible for recent outbreaks, and certain bathing pools in Germany have been incriminated. It may be that leptospiras, attenuated by sojourn in water, borne from soil, gain entrance to the ponds along with primitive vegetable elements capable of forming a zoogloea mass as a nidus. In this organic medium exaltation of virulence may possibly occur. One instance has been referred to in which a saprophytic water leptospira became pathogenic.

It is highly probable that rats inhabiting wet mines originally become infected from broken soil. They may acquire infection by feeding on slime in old disused tunnels blocked up with loose stones, as seen in the mine visited. One rat was actually observed to scamper into this ideal

hiding place. These old damp inaccessible branches no doubt afford favourable situations for the collection of much slime, the development of which will probably depend on the nature of the soil above. One means of combating the rat source of infection may perhaps be accomplished by completely walling off such conceivable breeding grounds from the main roadways.

Rats far distant from infected mines in East Lothian were also found to be infected with the leptospira, but no cases of jaundice have been reported in the particular areas. Foulerton,[12] Balfour,[13] and Stevenson[14] recorded the presence of pathogenic leptospiras in rats from different counties in England where the disease was unknown. Coles,[15] at Bournemouth, noted the existence of infected rats there, but pathogenicity tests were not done. These findings suggest that the leptospira is more ubiquitous in soil than at present suspected, and that rats may find a food delicacy in infected slime in soil. It may be also that they can acquire infection from water-attenuated leptospiras which, by passage, become pathogenic to man in certain circumstances.

Reasonable evidence for the assumption that rats become infected from slime, soil, or water, and so act as secondary disseminators of the disease, was found on examination of their urine. In addition to the presence of leptospiras, similar spirochaetes to those found in the slime and certain waters were found in the urine of many rats by dark-ground illumination.

Summary.

The discovery of an unrecorded natural habitat of the causal organism of spirochaetal jaundice has been reported.

The natural habitat was found in an infected coal mine, and consisted of roof slime formed by organisms with a glutinous envelope which yielded a jelly-like or zoogloea mass.

Inoculation of the slime into guinea-pigs produced pronounced and fatal spirochaetal jaundice.

The viscid slime proved to be a favourable medium for the growth and continued life of the leptospira, which lived symbiotically with many other species of organisms.

The observation has established a possible source of infection underground, where the leptospira existed in a situation inaccessible to rats.

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British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, BRADFORD, 1924.

SECTION OF LARYNGOLOGY AND OTOLOGY.

W. JOBSON HORNE, M.D., President.

CEREBELLAR ABSCESS.

BY

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DURING the period 1907 to 1923 (inclusive) 2,000 cases of acute purulent otitis media were seen at the Ear and Throat Department of the Royal Infirmary, Edinburgh, under the charge of Dr. Logan Turner (1907 to 1921) or under my own charge (1921 to 1923). Among these cases, 609 came to mastoid operation. One patient had cerebellar abscess and three had abscess of the temporal lobe. During the same period 6,492 cases of chronic middle ear suppuration were seen by Dr. Logan Turner or myself; 1,305 radical or modified radical mastoid operations were performed, and among these 26 had cerebellar abscess and 27 abscess of the temporal lobe. I am deeply indebted to Dr. Logan Turner for his kindness in providing me with these statistics.

During the years 1907 to 1923 I have performed 140 Schwartze operations and 725 radical or modified radical mastoid operations, and have dealt with eight cerebellar and with ten temporal lobe abscesses. Of the eight cerebellar cases, only one followed acute middle ear suppuration, while the remaining seven resulted from chronic purulent otitis media. (Neumann states that 85 per cent. of cases are due to chronic suppurative otitis media.) Four of these eight cases recovered and four died; six were males and two females. (It is stated that males are affected twice as frequently as females.) With one exception, all cases were under 30 years of age. The cerebellar abscess was on the right side in five cases and on the left in three. (Of Milligan's twenty-seven cases, twenty were on the left side. Neumann gives the following figures: left, 304; right, 284.) Of the seven chronic cases, two were due to scarlet fever and two to measles; in the other three the cause was not known.

ROUTE OF INFECTION.

1. *Labyrinthitis.*—Of the seven chronic cases only two had labyrinth suppuration, and in these there was an extradural abscess deep in the posterior fossa in the region of the saccus endolymphaticus; in both of these cases the sinus was healthy. (Neumann, Milligan, and others state that the majority of cases of cerebellar abscess are secondary to labyrinthitis, though Neumann's actual figure is 43.75 per cent.)

2. *Perisinus Abscess, but no Sinus Thrombosis and no Labyrinthitis.*—Two cases; one of these was the acute case.

3. *Extradural Abscess in Posterior Fossa in Triangular Area, but no Sinus Thrombosis or Labyrinthitis.*—One case.

4. *Perisinus Abscess and Sinus Thrombosis, but no Labyrinthitis.*—Three cases.

My experience is, therefore, that cerebellar abscess is usually associated with extradural abscess in the posterior fossa, with or without sinus thrombosis. Labyrinth suppuration was present in only two out of eight cases.

SYMPTOMS.

We must remember the condition in which these patients are admitted to hospital. As a rule they are extremely ill and in a drowsy or semi-comatose condition, so that it is practically impossible to put them through a complete "third degree" examination in the way of functional tests of the cochlear and vestibular apparatus and of the nervous system. In the majority of cases questions were answered slowly, but it was only noted in one instance on admission that the speech had a slurring character.

(*a*) *General Symptoms.*

In at least three of the seven chronic cases symptoms of an intracranial complication had been present for two or three weeks before the patient was sent into hospital. Headache was present in all cases, and in two was not only occipital but also frontal; one patient held his head with his hands. (Okada considers fixed occipital pain the chief diagnostic symptom.) In six of the eight cases earache was noted apart from the headache; in all vomiting was a prominent symptom. Drowsiness was marked in at least five of the seven chronic cases; in the other two it was not noted. In three of the seven chronic cases shivering or rigors were present: these symptoms, however, were probably due to the presence of an extradural perisinus abscess or sinus thrombosis. In three of the chronic cases constipation was noted and the tongue was dry and furred. Emaciation was marked in four of the seven chronic cases.

Changes in the Optic Disc.—Blurring of the margins of the disc was noted in three cases, and well marked optic neuritis in two. In these latter cases, however, the optic neuritis was not present on admission, but was only found after the abscess had been evacuated. Neumann has noted this and thinks it due to toxic influences.

Temperature.—Here again we must remember that the majority of the cases were associated with abscess in the posterior fossa or even with a blood infection. Two of the chronic cases had purulent meningitis present on admission, in addition to extradural abscess and sinus thrombosis. In only two cases when the patient was first seen was the temperature of the typical subnormal type, with slow pulse. In the others both pulse rate and temperature were above normal.

(*b*) *Localizing Symptoms.*

In only two of the seven chronic cases did the patient complain of giddiness or loss of balancing on admission.

Spontaneous nystagmus could not be tested in one case on account of the comatose condition of the patient; in another there was no spontaneous nystagmus before the first operation. Two patients had nystagmus to both sides, including the acute case. In the fifth case nystagmus was directed to the side of the lesion. In two other cases nystagmus was present to the sound side, and in one of them it was also noted on looking upwards. In the remaining case the nystagmus was at times directed to the diseased and at others to the sound side. From these facts we may say that spontaneous nystagmus is not necessarily present in cerebellar abscess, at least if the operation be performed within a short time of the patient's admission. If, however, a considerable period elapses before operation, nystagmus is almost sure to be found if repeated examinations are made. The nystagmus may be directed to the side of the lesion, or to the sound side, or to both. It is characteristic, however, that the direction of the nystagmus changes, and, further, that this sign may be absent at one time and present at another. According to Bárány, there is no connexion between the direction of the nystagmus and the direction in which the patient tends to fall. Further, the direction of the fall is not influenced by the position of the patient's head or by the caloric test.

Tenderness on tapping over the cerebellar fossa on the affected side was noted in two cases (Davidson and Sharp). This sign was present in one-third of Neumann's cases. In four of the early cases the pointing test was not carried out: in two of the chronic cases there was no pointing error, but in the remaining two this sign was present on testing the movement of the shoulder-joint on the side of the cerebellar abscess. In both the upper extremity deviated outwards on the side of the abscess. Dysdiadokokinesia: lagging of the upper extremity on the side of the disease in the pronation and supination test was noted in two of the cases; but it is not claimed that this test was invariably carried out, as some of the patients were operated upon before the introduction of this method of examination. The knee-jerks on the side of the cerebellar abscess were increased in at least three cases.

A difference in the strength of the grasp on the two sides does not appear to be of great importance; in two of the cases the grasp was stronger on the side opposite to the abscess, and in two it was weaker on this side. Neumann states that paresis on the affected side may be due to (1) pressure on the pyramidal tracts below the decussation; (2) a focal cerebellar symptom. The condition of the pupils does not appear to throw much light on the diagnosis of the cerebellar abscess and I will therefore omit it. Wilfred Trotter mentions skew deviation of the eyes as a transitory phenomenon, upwards and outwards on the side of the lesion and downwards and outwards on the other. Facial paresis on the ipsolateral side was noted in one case before operation. Two of the patients, when first seen in bed, were lying on their backs in a semi-comatose condition; in two others it was noted that the patient was lying curled up on the sound side. Neumann states that in cases with nystagmus to the affected side the patient lies on this side since this diminishes the vertigo. Further, Neumann states that the patient inclines his head to the affected side and may hold his head between his hands; this was observed in one of my cases.

Otoscopy.—Sagging of the meatal wall was noted in three of the seven chronic cases, preventing a view of the drum-head. A polypus surrounded by pus was present in one instance, while in the remaining cases pus and cholesteatoma were noted. In the acute case pus was present. In six of the seven chronic cases there was mastoid tenderness, and in two of these there was also a subperiosteal abscess.

Operation.

In only four of the eight cases was the diagnosis of cerebellar abscess sufficiently certain at the time of the first operation to enable me to proceed to the opening of the abscess. In the remaining four cases the collection of pus in the cerebellum was only evacuated at a second, or even at a third operation. This raises the question as to whether it is in the best interests of the patient to operate within a short period after admission. If the case is not a very urgent one it is probably better to delay for a day or two in order that a thorough otological, neurological, and ophthalmoscopic examination may be carried out. It is obvious that the chance of recovery of a patient suffering from cerebellar abscess is prejudiced by the performance of a mastoid operation associated with the use of the hammer and gouge, unless at the same time the collection of pus in the brain is evacuated. In this connexion we must remember that the majority of the cases had other intracranial complications apart from the question of labyrinthitis. If meningitis is present the symptoms are so marked that the presence of a cerebellar abscess is very likely to be overlooked. Further, sinus thrombosis, with its rigors and hectic temperature, urgently calls for operative interference; indeed, in two cases all three of these complications were present. When the symptoms of meningitis subsided, after the mastoid operation had been performed and the extradural abscess had been opened, those of sinus thrombosis became prominent, and it was only some days after the sinus had been dealt with that the cerebellar abscess was operated upon. I can claim, however, that no case of cerebellar abscess under my charge came to necropsy with the abscess unopened, though in one case there was a second cerebellar abscess separated from the first by a quarter of an inch of apparently healthy tissue.

In each of the seven chronic cases cholesteatoma was present. In four of them the mastoid was dense; in the remaining three the mastoid cortex was softened by disease, though probably the process had originally been of the dense type. In one of these latter cases a Bezold's mastoiditis was present. In five of the seven chronic cases an extradural perisinus abscess was present, and was probably the route of infection to the cerebellar abscess. In all five cases the pus was foul-smelling and, as a rule, had a greenish tinge; in only two cases was the sinus normal. Purulent meningitis was already present on admission in three of the chronic cases (pus and organisms in the cerebro-spinal fluid); one of these subsequently recovered. Two patients developed meningitis after the first operation (pus and organisms in the cerebro-spinal fluid); both of them recovered. In the acute case the pus in the cerebellar abscess was not foul-smelling, and gave a pure growth of pneumococci. Unfortunately, bacteriological examination of the pus was only carried out in five of the seven chronic cases, with the following results: (1) a Gram-negative bacillus and staphylococci; (2) a streptococcus, coliform bacilli, and *B. proteus vulgaris;* (3) a diplo-streptococcus, and an anaerobic bacillus; (4) a Gram-negative bacillus; (5) Gram-negative and also Gram-positive bacilli, with Gram-positive and also Gram-negative diplococci. Neumann calls attention to the soft necrotic walls of cerebellar abscess due to Gram-negative anaerobic bacilli; such abscesses have a feeble tendency to heal.

Methods of Opening the Cerebellar Abscess.

1. Through the triangular area, with exposure of the sinus and opening of the posterior and lateral semicircular canals—that is, Neumann's operation (two cases).

2. Through the triangular area, with a counter-opening behind and below the sinus (one case).

3. Through the posterior wall of the sinus and triangular area (one case).
4. Through the sinus wall (two cases).
5. Behind the sinus (two cases). This was the method employed in the acute case as the labyrinth and sinus were healthy.

According to von Bergmann, there is sufficient space between the sinus groove and the posterior canal to allow of the opening of a cerebellar abscess; my own observation does not confirm this.

Method of Drainage.

In five cases strips of iodoform gauze only were used. A rubber drainage tube was employed in two cases, but had to be supplemented by gauze packing. In the acute case a cigarette drain was successfully employed—that is, several strands of iodoform worsted with rubber dam tissue wrapped round them. Neumann uses a rubber tube wrapped in gauze. Milligan has employed a double metal tube—one inside the other. Moure uses an instrument like a Thudichum nasal speculum, the blades in the abscess cavity and the spring on the surface.

Respiratory Trouble during Anaesthesia.—In two cases the respiration stopped during the operation, necessitating artificial respiration and rapid completion of the operative procedure.

PROGRESS.

The acute case made a practically uninterrupted recovery; vomiting stopped, and the pulse rate and mental condition became normal. Nystagmus was noted to the side of the operation.

Of the seven chronic cases, three recovered and four died. Taking the recoveries first—one of the patients (M. S.) suffered from meningitis, septic sinus thrombosis, and gangrene of the lung due to septic infarction, and cerebellar abscess. As might be expected, the recovery was slow. Drainage of the cerebellar abscess was omitted on several occasions, but had to be replaced owing to reaccumulation of pus. Optic neuritis, which was just beginning on admission, became marked during convalescence. The patient was unable to stand or walk for about six months after evacuation of the cerebellar abscess. She tended to fall to the diseased side, and there was marked nystagmus to this side. Subsequently she got very fat, and has now no difficulty in balancing. There is still a considerable cerebellar hernia in this case.

The second successful chronic case (J. W.) had a mastoid operation first. A second operation was performed on account of elevated evening temperature, and the sinus was found to be clotted: the internal jugular was ligatured. The temperature became normal, but the patient was drowsy and spontaneous nystagmus developed with vomiting. The pulse was slow, there was pointing error and dysdiadokokinesia; the patient was very emaciated. At the third operation the cerebellar abscess was incised through the sinus wall and a hernia cerebelli rapidly formed; this was treated by pressure and by painting with 10 per cent. formol solution. Later the hernia was ligatured and repeated lumbar puncture performed. (Neumann recommends excision of the hernia at the level of the dural opening.) Four months after operation the patient walked with a rolling gait and there was still nystagmus to the side of the lesion. A wire cage was made to shield the cerebellar hernia, but proved too small, and the pressure so produced resulted in a recurrence of meningitis, from which, however, the patient recovered. A considerable cerebellar hernia is still present.

The last of the three successful cases (M. D.) developed a metastatic abscess over the sterno-clavicular joint. After the cerebellar abscess had been successfully opened and drained for a time the packing was removed; the temperature, however, again became subnormal and the pulse slow, the patient was drowsy, and optic neuritis developed. The abscess had to be reopened by Dr. Logan Turner during my absence; on this occasion a drainage tube was inserted. Two months after the first operation I closed the wound behind the ear, and the patient went on well for three years, when she suddenly had an attack of giddiness and vomiting, followed by loss of consciousness. The temperature was subnormal and the pulse 56; the patient lay curled up on the diseased side. The cerebro-spinal fluid was cloudy and under tension; it contained streptococci. During my absence Dr. Gardiner opened up the original incision, and found that cholesteatoma had re-formed and that the extradural abscess in the posterior fossa had recurred. He incised the dura and explored, but there was no recurrence of the cerebellar abscess. The patient has made a satisfactory recovery.

Passing next to the four fatal cases, we find that in the first (A. T.), a male, aged 64, the patient was not so well as expected on the morning after the abscess had been evacuated. He was still drowsy and there was nystagmus to the sound side with facial paresis; the last symptom was associated with the labyrinth operation. Incontinence was present. Lumbar puncture was performed, and the fluid was found to be clear but under pressure. The coma deepened, with cyanosis and Cheyne-Stokes respiration. At the necropsy there was only a slight exudate over the cerebellum, but a second abscess cavity was found in the posterior and lateral part of the cerebellum. This cavity was separated by a quarter of an inch of apparently healthy brain tissue from the abscess which had been opened through the triangular area. There was no labyriath suppuration, as proved by microscopic examination.

In the second fatal case (J. B.), a man, aged 27, the patient died on the evening after operation from respiratory failure, and at the necropsy it was found that the abscess had been successfully drained but that the brain tissue around was markedly oedematous. There was no meningitis. Microscopic examination in this case also showed that no labyrinthitis had apparently been present, though blood and pus were found in the vestibule as a result of the Neumann operation.

In the third fatal case (G. D.) meningitis and sinus thrombosis were present on admission. The sinus condition was dealt with, and two days later the cerebellar abscess was opened and drained. The symptoms of meningitis, however, became more marked, and the patient died from coma twelve days after the evacuation of the cerebellar abscess. The necropsy showed general meningitis and a large cerebellar abscess. Here again the labyrinth was normal except for a circumscribed labyrinthitis in the posterior canal, associated with the extradural abscess in the posterior fossa.

The fourth fatal case (H. S.) had only a mastoid operation in the first place, though an intracranial complication was suspected on account of the presence of a foul-smelling perisinus abscess. The wound was left open. The patient went on well for five days, and accordingly the wound was stitched up. On the next day the patient complained of headache and became drowsy, with well marked nystagmus and dysdiadokokinesia; there was no vomiting and no pointing error. The pulse was slow and optic neuritis present. The wound was accordingly reopened and a cross-cut made in a backward direction. A cerebellar abscess was evacuated behind and below the sinus. A hernia cerebelli rapidly formed. Later there was paralysis of the external rectus on the diseased side, headache, and vomiting. Death occurred nearly five months after the operation on the cerebellar abscess. The necropsy showed no sinus thrombosis and no meningitis, but the lateral part of the right lobe of the cerebellum was occupied by an abscess cavity. It would certainly appear that drainage of the cerebellar abscess through the triangular area is preferable to the opening behind and below the sinus.

DISCUSSION.

Dr. W. H. KELSON (London) asked whether Dr. Fraser considered cerebral or cerebellar abscess the more fatal. The late Mr. Hunter Tod had once told him that he had never had a case of recovery from cerebellar abscess. Drainage was, of course, more difficult in the latter.

Dr. RITCHIE RODGER (Hull) said that Dr. Fraser had referred to the desirability of waiting for definition of symptoms before operation, but there was a danger in that. He had had two cases of sudden death; both occurred during the war and diagnosis was reached late at night, an

operation being arranged for early the following morning. The first case died after convulsive seizures, and the second from respiratory failure a few hours before operation was due. He now operated on either cerebral or cerebellar abscess as soon as he had made up his mind as to the condition.

Mr. C. A. Scott Ridout (Portsmouth) said that he had had one death out of three cases of cerebellar abscess seen during recent years. He believed in operating at once when the diagnosis had been made.

Mr. H. Bell Tawse (Nottingham) said that four cases within the last few years had caused him much thought. (1) An adult male: a right temporo-sphenoidal abscess was opened and drained; next morning he was able to read newspapers, but the same afternoon sudden death took place. On *post-mortem* examination a right cerebellar abscess had been found ruptured. (2) A girl, aged 12: at Christmas she had an acute left mastoid with lateral sinus thrombosis. The sinus was opened and the internal jugular ligatured; she was cured. The following June an acute right mastoid was opened and drained in the same patient. She gradually became drowsy, then semi-comatose, with symptoms of temporo-sphenoidal abscess, which was opened and drained. She was no better, and died in twenty-four hours. On *post-mortem* examination there was a right cerebellar abscess. In neither of these two cases was there any sign of cerebellar abscess—probably the symptoms were masked by the temporo-sphenoidal one. (3) An adult female, semi-comatose when seen: a left temporo-sphenoidal abscess was opened and drained; she was no better, and forty-eight hours later there were signs of cerebellar abscess on the same side. The cerebellum was explored, with negative results. She gradually recovered consciousness, and was still alive and well. (4) An adult female, semi-comatose when seen; she had a history of old left ear trouble, but no evidence. A physician and neurologist diagnosed left cerebellar abscess and advised operation within forty-eight hours. In the interval the patient regained consciousness and was now quite well; the condition was probably epidemic encephalitis. The diagnosis of cerebellar abscess was very difficult at times, and when associated with a temporo-sphenoidal abscess diagnosis might be impossible, but the possibility of the presence of both ought to be kept in the back of one's mind. He would be glad to know if lumbar puncture was advised before opening the brain abscess.

Dr. J. S. Fraser, in reply to Mr. Kelson, stated that in his experience temporal lobe abscess was more fatal than cerebellar; at any rate his own results in the former were not as good as the 50 per cent. recovery obtained in the latter. In several of his temporal lobe cases the abscess was on the point of rupture, or had ruptured into the lateral ventricle, when the patient was admitted. Dr. Fraser was interested in what Dr. Ritchie Rodger had said as to the dangers of delaying operation in cases of cerebellar abscess, but pointed out that the difficulty of diagnosis arose especially in those cases in which not only an extradural abscess but also purulent meningitis and sinus thrombosis were present in addition to the cerebellar abscess. It was well known that meningitis might imitate the symptoms of sinus thrombosis and of cerebellar abscess, and, further, that the symptoms of these two latter complications were more prominent than those of abscess in the cerebellum. In reply to Mr. Scott Ridout, he stated that in opening the cerebellar abscess he advocated the route through the triangular area. In passing round a specimen which showed the small size of the space between the sinus groove and the posterior canal he had only wished to demonstrate the fact that in many cases drainage of the cerebellar abscess through this area necessitated opening up of the posterior canal. He congratulated Mr. Scott Ridout on his percentage of cures (75 per cent.). In reply to Mr. Tawse, Dr. Fraser stated that he had not had a case of both temporal lobe and cerebellar abscess. He was always rather unwilling to perform lumbar puncture before opening a cerebellar abscess, granted that the latter could be diagnosed at the time of operation.

NASAL NEUROSES.

BY

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In this communication I hope to advance a hypothesis which is based for the most part upon practical experience. The observations, which have extended over a good number of years, and which have led me to formulate certain opinions, suggest the probability that a considerable proportion of the common nasal signs and symptoms is merely the local expression of a general systemic condition, and, as such, may play an important role even when occurring in conjunction with anatomical defects or pyogenic infection in the nose.

It is unnecessary to remind you that structural intranasal defects may exist without giving rise to symptoms, and it must be equally well known that efforts to cure symptoms by evacuating and draining septic foci sometimes fail to yield the expected result. For an explanation of this apparently anomalous situation we must look further afield, and it is in this quest that we are confronted with the group of clinical entities somewhat unfortunately described as nasal neuroses.

When I received an invitation to write a short paper upon this subject I took occasion to ask a number of men, including the physician, neurologist, and rhinologist, what meaning the name "neurosis" conveyed to their minds; the replies were neither descriptive nor helpful, and in point of fact rather convinced me that the term is apt to be misleading, and might with advantage be replaced by a better word.

The best conception of the meaning of this curious word is to be found in a definition given by Purves-Stewart, who says:

> "A neurosis may be defined as a molecular abnormality of the nervous system (whether cerebro-spinal or vegetative, or both together) characterized clinically by abnormal reaction to ordinary stimuli. These stimuli may be physical or emotional; they may arise outside or from within the patient's body. The abnormality of reaction may consist in excessive response, in diminished or absent response, or in some unusual or strange response. We must recognize that the neuroses are real diseases with positive clinical phenomena, as real as small-pox or cancer."

In the limited time at my disposal I do not mean to attempt a survey of the whole field of nasal neuroses, but rather to confine my observations to some of the conditions which are associated with disturbance of the somatic sensory and the autonomic nerve supply. The consideration of this perplexing subject would be incomplete without some reference, however brief, to the physiology of the nose in so far as it is related to the involuntary nerve supply.

The autonomic, or involuntary, nerve supply to the nose has been established beyond reasonable doubt, and, though some confusion prevails in connexion with the nomenclature, the physiologists seem to be in agreement regarding two distinct paths in this system with different anatomical connexions and physiological actions. In this paper the involuntary nerve system will be referred to as the autonomic system and its subdivisions as sympathetic and parasympathetic.

The sympathetic nerve path takes origin in the upper thoracic portion of the spinal cord, traverses the cervical sympathetic cord, and relays after interruption in the superior cervical ganglion. From thence the post-ganglion fibres proceed by way of the upper four cervical nerves to the carotid plexus.

The parasympathetic fibres are connected with the grey matter in the floor of the fourth ventricle, and proceed via the facial nerve, from which they continue as the great superficial petrosal nerve.

The sympathetic rami from the carotid plexus become the deep petrosal nerve, which unites with the great superior petrosal to form the vidian nerve, and thus terminate in the spheno-palatine ganglion.

This relay station of the involuntary nerve system is situated in the spheno-maxillary space, slightly above and behind the posterior end of the middle turbinate, and close to the pharyngeal mucosa. Though minute in size its

branches of distribution are numerous, and may be divided into four groups: (1) the ascending, which supply the mucous membrane of the posterior ethmoidal cells and the sphenoidal sinus; (2) the descending, which are distributed to the palate, fauces, and nose; (3) the internal branch supplies the septum and outer nasal wall; (4) the posterior branch innervates the upper region of the post-nasal space. Whether the spheno-palatine ganglion is purely parasympathetic or of a mixed variety cannot definitely be stated. It can, however, be assumed with some certainty that the post-ganglionic fibres, in common with those of the autonomic nervous system in general, are of two varieties and possess distinctive functions. Those fibres which are described as sympathetic convey efferent impulses of a vaso-constrictor and secretory nature, while those named parasympathetic deal with impulses which produce vaso-dilatation as well as secretion.

It should be remembered that the ganglion cells cannot originate an impulse without stimulation from the central nervous system. The excitation of impulses in the autonomic nervous system in general may be the outcome of psychic action, of which there are many well known examples. On the other hand, the involuntary impulse may be due to the action of drugs and proteolytic products which may act locally or through the blood stream, and there is experimental evidence to show that the sympathetic and parasympathetic sections respond in different ways to various pharmacological products; thus one drug may cause constriction of the blood vessels and dry up secretion, while another will produce the opposite result. If drugs and proteolytic products can so affect the involuntary nervous system, I think we may reasonably assume that toxins may play an equally important part.

The consideration of the disease known as tetany affords further evidence of disturbance of the autonomic nerve system by a blood-borne agency, and may be regarded as a link in the argument in favour of such systemic action upon the involuntary nerve supply to the nose. Falta and Rüdinger call attention to their observations showing that all tetany patients in the acute stage exhibit outspoken vasomotor disturbance. Falta and Kahn observed lacrymation in the tetany attacks, with slight hyperaemia of the conjunctiva, and these symptoms were associated with an increased flow of saliva. In this connexion Elliot pointed out that the vaso-dilators respond earlier to minimal sympatheticotropic stimuli than do the vaso-constrictors; hence vaso-dilatation is an especially delicate reagent for testing the excitability of vasomotor nerves.

Ablation of the parathyroids leads to the production of a certain group of phenomena which can also be produced experimentally by the introduction into the blood stream of guanidine; in either case the symptoms can be abolished by the intravenous injection of a salt of calcium. Guanidine is a proteolytic product found normally in the large intestine, and to a small extent in the blood; it is known to be subject to increase in amount in certain intestinal conditions. The influence of calcium, when administered internally, upon nasal phenomena has impressed me on many occasions, and has reinforced interest in the striking results obtained from the use of this substance in the treatment of tetany, experimentally produced or as a clinical entity.

In a recent publication by Graham and Anderson upon the treatment of infantile tetany the following statement is made:

> "During the past year we have had the opportunity of treating many cases of tetany, varying in severity from the latent form in which few distressing symptoms were present to the severe type in which frequent convulsions or severe laryngismus were endangering the life of the patient. We have invariably been successful by the oral administration of calcium chloride in doses of from 15 to 20 grains at intervals of four hours, in causing not only a rapid cessation of the convulsions, but a complete disappearance of all signs of tetany."

These recorded observations, viewed in conjunction with one's experience of the influence of calcium upon certain nasal phenomena, together with the apparent antagonism of calcium to guanidine when the latter has been used for physiological purposes, suggested to me the following experiments, which were carried out by Dr. G. A. Clark in the physiological laboratory of the Durham College of Medicine.

A rabbit weighing 1.9 kilos, after an examination of its nasal mucosa, was given 0.1 gram of guanidine hydrochloride into a vein. In a few minutes the animal became less active and showed signs of salivation, masticating movements, and frequent rubbing of the nose and mouth with both forepaws. Within ten minutes saliva poured from the mouth, and it assumed a dull and listless attitude. Examination of the nose revealed turgidity of the mucous membrane and a definitely increased amount of clear watery mucus. The animal was now given 2 c.cm. of a 2 per cent. solution of calcium chloride into a vein. Almost immediately signs of returning activity were noted and diminution of the salivation. In five minutes the flow of saliva had ceased and the animal became active and sniffed about its cage. Ten minutes after the injection of calcium the nasal mucosa had apparently returned to its normal state, and there was no sign of excess of mucus in the nose.

Three other rabbits were subjected to similar experiments with varying doses of guanidine. In each case increased vascularity in the nose was noted, as well as an increase of mucus, and each animal performed active chewing movements and nose rubbing. Only two of the four animals developed profuse salivation, and in those instances there was also pronounced dyspnoea, which physical examination suggested might be due to obstruction to the passage of air through the bronchial tubes.

Those experimental data seem to me to indicate the fact that the nose can be influenced by blood-borne agents, and intranasal conditions be established which in all respects resemble what is commonly known as catarrh. Moreover, I think it may be assumed that a variety of blood-borne agents may bring about those phenomena, as well as animal emanations and the pollens of flowers and grasses.

With a view to eliminating some of the difficulty connected with the classification and nomenclature of the nasal neuroses, the following division of the subject into three main classes is suggested: (1) olfactory, (2) somatic sensory, (3) autonomic sensory.

As already indicated, the first class does not come within the scope of this paper. The second and third represent what Sluder calls the neuralgic and sympathetic classes of the neuroses; the former I have called somatic sensory, as it seems likely that the pain is due to impulses passing through the ordinary sensory nerves rather than the involuntary. The somatic sensory class is represented clinically by the so-called lower-half headache and the other neuralgic symptoms. Pain at the root of the nose, over the eye, in the pharynx, behind the ear, and even in the neck and shoulder, comprise the syndrome of this neuralgic type, though any one of those sites of pain may alone be concerned. Pain in the mastoid tip from this source has led to operation upon the normal bone. Such an error may be avoided by an application of cocaine to the mucous membrane covering the site of the spheno-palatine ganglion; such an application immediately dissipates the pain of nasal origin.

When a patient displays this clinical picture, careful search should be made for any source of irritation in the nose, mouth, or fauces, and particularly for evidence of sphenoidal or post-ethmoidal disease. When, as sometimes happens, no local pathological condition can be found, the possibility of the irritant being in the nature of a blood-borne agent should always be kept in mind, and no attempt made to treat the ganglion with injections of alcohol until all else has failed to give relief. In the same way I do not think any operative exposure of the sphenoidal sinus or ethmoidal cell area should be carried out unless there is some pretty definite evidence of an infective process therein.

In the third or autonomic sensory class we include all those cases in which there is increased mucus secretion, together with more or less alteration of a temporary or permanent nature in the appearance and character of the nasal mucous membrane. In the manifest variety the mucosa is in a state of constant tumefaction and is pale and watery-looking; it has an appearance which suggests oedema, and nasal obstruction is a prominent factor. It is in this variety that one may encounter the simple mucous polypus and the polypoid middle turbinate, and

there is some reason for supposing that the neurosis may afford the explanation of their origin. There are, of course, greatly modified types in which the mucosa is merely turgid or the inferior turbinates are full and show a kind of stippled appearance. In such examples the obstruction is usually intermittent, and the excessive secretion of mucus is spasmodic and associated with sneezing, particularly in the morning. Sneezing need not necessarily occur, and in such cases the only complaint may be some stuffiness and watery discharge, very often regarded as a susceptibility to cold.

Such clinical manifestations may be called vasomotor rhinitis or nasal hydrorrhoea; it does not matter much so long as we regard them as the local expressions of a general state, and do not expect to bring about relief by the employment of local remedies. Indeed, in such cases local treatment, whether operative or therapeutic, not infrequently seems to aggravate rather than ameliorate the symptoms, and this is true even in the case of the mildest intranasal medicament.

What may be regarded as the exciting causes of this autonomic sensory disturbance in the nose?

It is now generally accepted that the pollen of grasses and flowers may produce in certain people intranasal symptoms and signs which belong to the category just described, and which we rather loosely call hay fever. In like manner there is reason to believe that animal, vegetable, and bacterial proteins may induce disturbance in the nose owing to some subtle and as yet unexplained biochemical action. I have clinical records of many cases in which the nose has been disturbed by animal emanations and by a variety of common food proteins, and the results obtained from exclusion of the irritants have invariably been most striking.

The following illustrative cases are of some interest.

1. A sea captain upon whom I did a submucous resection for the relief of some gross obstruction admitted improvement only when he lived ashore. As soon as he went to sea some of his old symptoms cropped up—namely, stuffiness, sneezing, and watery discharge. Inspection of the nose and upper respiratory tract generally revealed no local cause, and a systemic origin was suspected. He was eventually found to be sensitive to eggs and oats, and he readily admitted that those were the two articles of diet which he never had at home and which he always ate on board ship. When those things were excluded from the diet the nasal discomfort vanished.

2. A young man of 30, of strong physique and good personal history, complained of a feeling of cold in the head which had persisted more or less for six months. During this time a great deal of intranasal treatment had been carried out, with no relief of the symptoms. The signs in the nose suggested to me vasomotor instability, and a pronounced skin reaction to feathers was obtained. This patient was spending the greater part of his leisure in a pigeon-loft, looking after some prize birds; when he gave up the pigeons his nasal symptoms disappeared.

3. A boy, aged 12, with persistent catarrhal signs and symptoms, including at times a good deal of nasal obstruction, was seen by me, after many operations had been performed upon his nasopharynx without apparent benefit. The history and general features suggested a vasomotor basis, and after careful investigation, including skin protein tests, it was decided that he was sensitive to the domestic dog, which was a personal pet. When the dog was disposed of the boy recovered.

It is generally conceded that gastro-intestinal disturbance, and notably the torpid colon, may lead to the development of nose symptoms of a catarrhal nature. My observations suggest that there is a definite connexion between auto-infection from the bowel and those nasal symptoms which may be classified as autonomic sensory, and the results obtained by the experimental use of guanidine lend some support to this view. It seems reasonable to suppose that such systemic blood contamination may be an important causative factor in the catarrhal condition of the nasopharynx in early life. It would even seem possible that this disturbance of the mucous membrane might lead to the hypertrophy of the lymphoid tissue which composes Waldeyer's lymphatic ring, and which in its wet and bulky state becomes infected with bacteria, the action of which is likely to aggravate or perpetuate the catarrhal state.

The effects produced by guanidine experimentally employed can be successfully neutralized, as already mentioned, by the administration of calcium. In like manner many cases belonging to the autonomic sensory group respond sometimes in a striking manner to some salt of calcium given by the mouth. In such cases the improvement is likely to be lasting if at the same time the diet is regulated, the colon stimulated, and some form of intestinal disinfection carried out.

Some difference of opinion exists as to the absorption of calcium when administered orally. It has been suggested that it does not enter the blood at all as calcium, while others hold the view that it is absorbed from a very small area of the duodenum. Clinical experience seems to indicate that calcium is absorbed when given by the mouth, and that when so used it should be given in large doses. Time does not permit of a recital of clinical evidence in connexion with this matter, though the examples in my experience are numerous and no less noteworthy than those which have already been detailed. The psychic element plays some part, and I am inclined to think it is a minor part, in the production of vasomotor disturbance in the nose. Fear will no doubt cause turbinal shrinkage of a very temporary nature, and excessive sexual stimulation may lead to intranasal turgescence and increased mucus secretion, also of an evanescent character. Though attempts have been made to introduce certain internal secretions and their interrelationship in order to explain physiologically those psychic manifestations, nothing has so far been done to remove the subject from the realm of speculative thought.

Conclusions.

1. The nasal neuroses are real clinical entities.
2. They are to some considerable extent excited by blood-borne agents, animal emanations, and the pollens of flowers and grasses, in predisposed subjects.
3. Comparatively few noses fail to show some evidence of this involuntary nerve sensitiveness.
4. The neuroses may explain the pathology of the mucous polypus.
5. The neuralgic syndrome may lead to confusion in diagnosis, particularly in regard to pain in the ear and the mastoid process.
6. The manifestations may occur alone or in conjunction with pathological or anatomical defects.
7. If a neurosis is present, together with a structural defect or pyogenic infection, it must be included in the treatment in order to ensure success.

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DISCUSSION.

Dr. A. Brown Kelly (Glasgow) said that he did not understand why more attention was not paid to the vasomotor factor in rhinology; he estimated that it had played a part in about 10 per cent. of his nose and throat cases. He did not mean that he got that percentage of patients coming with typical attacks, but with one or more of the cardinal symptoms, such as sneezing, rhinorrhoea, or obstruction. In the textbooks there was no information how these symptoms, when due to a vasomotor disturbance, differed from those due to rhinitis. He agreed with Dr. Maclay that polypi in many cases were due to vasomotor disturbance. On questioning patients it was found that obstruction was preceded by long periods of sneezing and "colds." There was also a variety of polypus which might be termed a "vanishing" polypus, which came and went with vasomotor attacks. Dr. Maclay had limited himself mainly to the neuroses arising from toxic or irritant substances. His experiments with guanidine were of importance, and marked a distinct advance in the knowledge of the subject. The variety to which Dr. Brown Kelly had given most attention was that due to nervous exhaustion. It might occur in school children working for examinations

in a daughter nursing a dying relative, or in a wife with a husband addicted to secret drinking. Nervous exhaustion produced hyperaesthesia in a considerable proportion of individuals. Heredity might increase the predisposition; a history was often obtained of father and grandfather having also been a "great sneezer." The hypersensitiveness, besides causing general instability, might affect the nasal nerves. If, on testing, he found these points unduly sensitive, he injected a few drops of diluted alcohol into the neighbourhood of the nerve. It should be remembered, in regard to vasomotor affections, that these were functional and that they varied from time to time. Dr. Brown Kelly did not find that food proteins were a cause as often as one might expect from the American literature on the subject.

Mr. JOHN F. O'MALLEY (London) remarked that Dr. Maclay had drawn an interesting deduction from the use of calcium in tetany, and put forward the suggestive hypothesis that nasal neuroses were connected with some calcium inefficiency. The work of Grove and Vines on the question of calcium deficiency in the blood had interested him for years, but without the help of a trained physiologist the estimation of blood calcium was very difficult to carry out. They found that the administration of calcium by the mouth had very little influence in raising its blood content, but the use of 1/10 grain of parathyroid was very effective, and with this raising of the calcium blood threshold the diseases under treatment showed improvement.

Dr. W. H. KELSON (London) was convinced that there was often a psychical or reflex cause for many nasal neuroses.

Mr. DUNLOP pointed out the frequent association of hyperchlorhydria with nasal neuroses which he had observed from practical experience.

Dr. NEIL MACLAY, in reply, said he had no doubt that calcium—or something with an influence similar to that of calcium—did get into the blood after administration by the mouth, in spite of what the physiologists said. But small doses were of no avail; he gave 20 to 30 grains of calcium chloride, made up as an elixir according to Martindale's formula, three times a day.

DEFINITE DIAGNOSIS IN AFFECTIONS OF THE EAR, NOSE, AND THROAT.

BY

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IN case I should be accused of presumption and should be held lacking in that virtue, modesty, which we all so much admire in others, and practise ourselves, stopping short only where it might endanger our advancement, let me state at once that my reason for making this communication is not that I would teach those who by training, experience, and ability are more fitted to perform that office for me, though it is conceivable that it may not be altogether barren of this result, but that the Annual Meeting of the British Medical Association provides an opportunity for bringing more directly before the general members of the profession the views and work of those who confine themselves to special branches. Indeed, it is, I believe, expressly stated that in the discussions that take place this aim should be as far as possible recognized. At the same time I have no doubt I shall draw upon myself some criticism.

The ear is never thoroughly examined until we have examined the nose and throat: we are all agreed on that. In allocating the blame and assessing the degree of culpability of the nose and throat in aural affections battles have been fought, and we should discover in ourselves disagreement. While even the laity nowadays understand the baneful influence which adenoids have upon the ears, it is not recognized by members of our profession unconnected with our specialty that an aural condition may have been—has been, indeed, in a large proportion of cases—caused by some abnormal or pathological affection of the nose or throat. There is some difference of opinion among ourselves on this point—not so much as there was, I think. Whether we look to suppuration in the posterior sinuses of the nose for a possible cause of oto-sclerosis or whether we accept the opinion that adhesive changes in the tympanum may arise as a result of a nasal septal deflection, and though we shall differ as to the probable effect of the correction of these conditions on the aural affection present, we do know, and we shall emphasize it in degrees varying with our temperament and experience, that the recognition of a nasal or naso-pharyngeal abnormality is, in many instances, the first step in the amelioration or cure of an aural affection. I am in the habit of telling my students that of all methods of examination posterior rhinoscopy is the most important. No doubt it is difficult too, but the amount of information obtained by posterior rhinoscopy is worth all the difficulty. In regard to this question of the relationship of nasal or naso-pharyngeal and aural affections it is all-important. I need only mention adenoids, and not only in children; their recognition at any age is a great gain. For the rest it may be said that the nearer to the nasopharynx a nasal affection is situated the stronger is the probability that it has a relationship to changes in the ears.

The nature and degree of the aural affection will naturally receive first consideration. The nasal affection need not be obstructive: it may be infective, though it is not always possible to separate the one from the other. Both are commonly present together. Hypertrophy of the posterior ends of the turbinals, thickening of the posterior end of the septum (bony or oedematous), and polypi may have their obstructive influence increased and an infective influence added by thick discharge caused by these conditions themselves or resulting from accessory sinus disease. This does not indicate even in the majority of cases posterior sinusitis, for, not unusually, it is towards the posterior orifice of the nasal cavity that the discharge from maxillary antral disease passes. There is no need, I think, to stress further the urgency of the examination of the nose and throat in middle ear affections. In affections of the external ear there would not appear to be, at first glance, any reason to look for an associated pathological condition of the nose or throat, and yet it seems to me to be more than a coincidence that so many cases of recurring furunculosis, of otitis externa, and of eczema of the meatus suffer also from nasal suppuration or from septic tonsils or dental disease. It would not be difficult to suggest a relationship. Of the subjective phenomena associated usually with the ear, otalgia, vertigo, tinnitus—any of these may have a nasal or naso-pharyngeal origin, direct or indirect. Though, apart from the ear itself, a carious molar is the most common cause of otalgia, I have seen very severe pain in the ear due to great enlargement of the posterior end of the inferior turbinal, unaccompanied, be it understood, by acute aural catarrh, and completely relieved by removal of the hypertrophy. Several times also I have traced the origin of otalgia to sphenoidal sinus disease—an association generally recognized by otologists. Sore throat is commonly accompanied by pain in the ear; and it is a common-place with us to insist on its significance as a sign of malignant ulceration of the pharynx.

Tinnitus can hardly be caused by a nasal affection alone, but it is our common experience that the most hopeful cases of this distressing symptom are those in which the aural affection is dependent on a nasal or naso-pharyngeal cause which can be remedied. The same may be stated of vertigo in most instances, though there are cases where this phenomenon appears to be due altogether to nasal or nasal sinus disease. In these there is possibly not only nasal obstruction as a factor in the causation of vertigo, but there is also, and probably especially, general toxaemia due to absorption of the products of suppuration.

Before I leave this part of the subject—the careful examination of the nose and throat in aural affections—may I press for the more frequent use of the direct method

in the examination of the nasopharynx, such as the use of Yankauer's speculum, both for diagnostic purposes and for purposes of treatment? What, too, is the significance of the adhesions one so frequently finds in the post-Eustachian recesses?

I come now to another aspect of this question of exact diagnosis. When a student in my clinic has reached the stage when by palpation, or better still by posterior rhinoscopy, he can diagnose the presence of adenoids he is nearly as content, though not so excited, as when he first obtains for himself a view of the vocal cords. When he finds that a child has diseased tonsils and adenoids he brings him to me with the diagnosis and with an air of having discovered the secret of the whole box of mysteries of the specialty, but when I ask him if he has examined the nose there is anticlimax. This failure to take a comprehensive view is not limited to students. Much, perhaps most, of the ineffectiveness of the adenoid operation in some cases is due to the neglect to examine the nose, and as a result to deal with an associated nasal affection. In my hospital practice I find that in something like 10 per cent. of children the nasal obstruction has a cause not only in the nasopharynx, but also in the nose itself—namely, turbinal hypertrophy of a degree requiring treatment, septal deflection, oedema of the middle turbinal, polypi. Antral disease, too, is much more common in children than is generally supposed. For obvious reasons it is more difficult to recognize, but that is no reason why the possibility of its presence should not be borne in mind. I wonder, too, how frequently choanal polypus in children is overlooked even by those who are most competent in rhinoscopy, especially posterior rhinoscopy.

I come now to a stage of my subject where I find myself seriously handicapped by my natural timidity! At one time, and at the present time in the uninitiated, nasal affections were summed up in nasal catarrh and nasal polypi. The former is, with us, more than suspect, the latter is incomplete. It would be a gain to accurate diagnosis if the term "nasal catarrh" were omitted from the textbooks, and if nasal polypi were treated not as an affection but as a symptom or sign. Of course, there is a condition of hyperactivity of the glands of the nasal mucosa, both acute and chronic, but in the great majority of cases there is some abnormality of the nose leading to obstruction or some infection which has determined the nasal discharge, or which, though it has resulted from it, has now become the chief factor in its continuance. Moreover, as Dr. Maclay has impressed on us, we must not lose sight of the possibility of some of these cases having a nervous origin, or rather being manifestations of an idiosyncrasy to certain articles of diet, or of the nature of hay asthma, using the term in a wide sense. It is too often taken for granted that a nasal discharge has a nasal origin, and though we are not likely to fall into this error if the discharge, on rhinological examination, is found in places which suggest the presence of accessory sinus disease, yet it is not even now sufficiently recognized that it is quite common to have sinus suppuration, and especially antral suppuration, without there being at the time of examination distinct evidence in the nasal fossa of its presence. It is in these cases that post-nasal rhinoscopy so often furnishes signs which are not obtained by anterior.

Now I come to the question of nasal polypi; many battles have been fought, and much ink has been spilt, over their origin. With the great extension in our knowledge and recognition of nasal affections, less attention has been given to the question; they are taking what I conceive to be their proper place. To paraphrase a quotation which will be recognized by those who have had the advantage of being brought up on the strong meat of the shorter catechism, "they are the outward and visible sign of inward invisible disgrace": *anglice*—they are the result of suppuration in, and are associated with, changes in the lining membrane of the nasal accessory cavities, and especially of the ethmoidal cells. Even where there is a single polypus growing from the middle turbinal this probably holds, since this body is merely an altered ethmoidal cell. I am not now discussing their mode of growth but their causation. Moreover, experience has taught me that in practically all cases of multiple nasal polypi the same degenerative changes are present in the antral cavity and in the sphenoidal sinus, though perhaps not so frequent, and depending, of course, on the extent to which the posterior ethmoidal region is involved. Almost without exception, acting on this assumption, we have found the antral lining membrane degenerated in all its extent, occasionally even where proof-puncture has been negative. Whether the antral disease precedes the ethmoidal disease and polypi, or whether the sequence is the other way about, I do not suppose it is always possible to decide. I am convinced, however, that if this association were more generally recognized, and treatment adopted accordingly, we should hear less of the unsatisfactory results of the treatment of nasal polypi. I daresay I shall not have the full agreement of members of the specialty in this opinion, but I make it as the result of prolonged observation which has led me to advise the logical routine in every case of multiple nasal polypi—namely, the thorough curettage of the ethmoidal cells and the radical treatment of the antral cavity by way of the canine fossa. The opening up of the sphenoidal sinus is conditioned by the result of posterior rhinoscopy and by the findings on curettage of the posterior ethmoidal cells.

Throat surgeons are a maligned class, and it shows how deep are their convictions and how strong their moral courage that they still follow the lead of their convictions. It is the tonsil which acts as the red rag to the bull, the maligners. Will my life be safe if I declare that the tonsil even yet too frequently escapes the fate it deserves? Not so much am I thinking now of the tonsil in children as in adults. While endless ingenuity has been expended on devising methods for the radical removal of the tonsil, or, on the other hand, for evading this course in deference to the wishes of patients who are conscientious objectors in matters operative, the examination of the tonsil is still in many cases a purely cursory affair. It amounts as a rule to the placing of a tongue depressor in position, the illumination of the mouth, and the inspection which this permits. A little reflection will show that this is not the way to examine the tonsils thoroughly. These look towards the middle line. Much—it may be most, in some it will be all—of the gland is hidden behind the anterior pillar, and at the most only the anterior part of it is properly seen. The right way to examine the tonsil is to draw back the anterior pillar and so to turn the tonsil to face the observer. This can be done with the tip of the tongue depressor, and at the same time that we view the appearance of the surface and see the condition of the openings of the crypts pressure can be made on the gland, and if there is purulent material in its depths it can be made evident. Many diseased tonsils, especially in adults, are overlooked because this little procedure is not employed, and when we are considering the effect of tonsillar disease on the general health, as well as on neighbouring structures, it is very necessary that our diagnosis should be as definite as possible. It is not only on the immediate structures that tonsillar sepsis shows its effect in the form of thickening of the pillars and palate, but congestion of the lower pharynx and of the larynx may be caused in this way, in part at any rate.

This, of course, is axiomatic to us. We complain often enough that teachers of singing and elocution neglect to have their pupils' noses and throats examined beforehand, and yet we are, I fear, not so insistent as we ought to be on the bad effects on the voice of nasal obstruction and infection, and of tonsillar disease. There is, of course, much more in the causation of inflammatory affections of the pharynx and larynx than this, but it is a rule worth emphasizing that in all inflammatory conditions of these parts we should look up—that is, for obstruction or infection in the nose and fauces. While in our climate and with our habits one may escape a chronic laryngitis if only nasal obstruction is present, hardly anyone will do so if to the obstruction is added the baneful influence of a septic nasal discharge, or of septic tonsils, or other septic affection of the mouth. Indeed, of all forms of chronic laryngitis probably none is so intractable as that caused by the inhalation of septic material from atrophic rhinitis.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

EXPECTANT TREATMENT OF UTERINE SEPSIS.

IN view of the current correspondence on puerperal sepsis the history and treatment of the following case will prove interesting to the advocates of immediate uterine interference in all cases of puerperal pyrexia of uterine origin.

A woman, aged 37, 6-gravida, all previous labours having been normal, was admitted to hospital on August 28th as an urgency case. She had been subjected to several vaginal examinations outside the hospital. On admission the pulse was 84, respirations 20, and temperature 98°. The uterus was the size of a thirty-eight to forty weeks' pregnancy. A face presentation was diagnosed, the os uteri admitting four fingers. As the woman was having good pains and the pelvic measurements were large, it was decided to do nothing until the cervix was fully dilated. The foetus was born practically to the perineum; low forceps were then applied and a living child was extracted without any complication.

Fourteen hours after delivery the patient had a rigor lasting thirty minutes; the temperature went up to 103.6° and the pulse to 140. A swab was immediately taken from the uterus and a blood culture made.

The temperature continued to swing daily from 100° to 103°; the pulse was 120 to 140. On the third day the pathologist's report was received: the uterine swab had yielded prolific colonies of pure streptococci of a virulent nature; the blood culture was negative.

On the sixth day the temperature became normal and for the remainder of the puerperium remained so, apart from four occasions, when it rose above 100°. From the fifteenth to the twenty-third day it remained normal and the patient was discharged to her home.

The treatment of this case was entirely expectant and consisted of fluids in large quantities, Fowler's position, ergot, and polyvalent antistreptococcus serum 60 c.cm. per diem. I cannot help thinking that disaster would have followed the introduction even of a finger, much more of a curette (blunt or sharp), into the uterus. Dissemination into the blood stream of these myriads of streptococci would inevitably have followed any breach of Nature's barrier of protective leucocytes.

May I suggest, in conclusion, that a careful microscopic examination of the urine in many cases thought to be puerperal sepsis would frequently reveal the presence of pus cells and the necessity of curettage thus obviated by large doses of potassium citrate?

I am indebted to Mr. Bourne for permission to publish details of this case.

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London, N.W.1.

ACUTE INTESTINAL OBSTRUCTION CAUSED BY DENSE ACCUMULATION OF ROUND-WORMS.

THE following case of acute intestinal obstruction due to a massed collection of round-worms is of interest.

Mrs. S., aged 24, was admitted into the General Hospital, Colombo, under my care at 5 p.m. on April 14th. She gave a history of acute abdominal pain, vomiting and nausea, and constipation of three days' duration. She also said that she had vomited four round-worms. The abdomen was distended, but moving well with respiration. On palpation there was slight rigidity of the abdominal wall, and a doughy mass was felt in the left half of the abdomen, and this lump was movable from side to side. Her pulse was 104 and feeble, the temperature 97°, and extremities cold. A high glycerin enema was given, but with poor result. An operation was decided upon, and at 7 p.m.—that is, two hours after admission—the operation was done. The abdomen was opened by a median incision, and distended coils of intestines presented themselves. Pus and two worms were found in the peritoneal cavity. The intestines from the jejunum up to the iliac colon were packed with round-worms, and in three places of the intestines, each for a length of 18 inches, the worms were very tightly packed together, and the intestines here were solid and looked like a well filled sausage, the girth of the intestines being about that of one's arm. The lumen of the intestines in these three places was entirely obliterated by this massed collection of worms. It was evident that a vermifuge would not reach the worms, so a longitudinal incision was made in each of these three places, and I began the unpleasant performance, together with my house-surgeon, of pulling out the worms with forceps, and each forcepsful would pull out ten to twenty worms. This took half an hour. The worms were of varying size in length and thickness. It was impossible to remove all the worms: 547 worms were taken away, and I think quite another 500 must have been left behind in parts of the intestines where they were not so densely massed together. The three intestinal wounds were closed in the usual way, and the abdominal wound closed after providing for drainage for the peritonitis which was present, and which was due to the passage of worms through the intestinal wall. The patient was nursed in the Fowler position and salines ordered by the rectum.

Next day her pulse was 110 and temperature 103°, and she vomited three more worms. In the evening her abdomen became distended and rigid, due probably to the increasing peritonitis. The following day she grew worse and died, death being due to peritonitis.

E. C. ALLES, F.R.C.S.,
Surgeon, General Hospital, Colombo.

DIFFICULTIES IN DISTINGUISHING BETWEEN FREE AND ENCYSTED FLUID IN THE ABDOMINAL CAVITY.

IN most cases it is a comparatively easy matter to distinguish between free and encysted fluid in the abdomen. The following case illustrates the great difficulty experienced sometimes when the signs are misleading.

Mrs. X, aged 71, had been suffering from diabetes for two years, but had kept in fairly good health by careful dieting. She noticed that her abdomen, legs, and feet had become much swollen, so that she was unable to walk, and she suffered from breathlessness even when at rest. This swelling and oedema came on in about a week. The abdomen was much enlarged and projecting, more so on the right side. Great oedema of the abdominal wall was present, also more marked on the right side, but there was no bulging of the flanks. The buttocks, legs, and ankles were also oedematous. The abdomen was dull to percussion, the fluctuation test was negative, and the liver could not be felt. Vaginal examination revealed nothing abnormal. The urine, except for a trace of albumin, was normal. She was seen by two of us, who diagnosed ovarian cyst with a certain amount of torsion of the pedicle. This diagnosis was made on account of the rapid appearance of the enlargement and its prominence on the right side, the greater oedema of the abdominal wall on that side, and the absence of bulging of the flanks. A third confirmatory opinion was obtained. Operation was decided on, as the only means of relieving the patient, who was now suffering from the effects of compression of lungs and heart.

Operation.—The abdomen was opened and about two gallons of serous fluid escaped. The uterus and ovaries were normal, the liver was enlarged and studded with nodules evidently malignant; no other growth was sought for as the patient was not doing very well. She made a good recovery, however, and the abdomen has not filled up again.

If an accurate diagnosis had been possible it would have saved the patient from the dangers entailed by a major operation, since relief could have been given easily and safely by a trocar and cannula.

Montgomery, Wales. S. J. STEWART, M.B., D.P.H.

PARATHYROID EXTRACT IN SPRUE.

SOME notes have been received from Dr. D. HENNESSY, the General Hospital, Penang, Straits Settlements, relative to the treatment of a case of sprue by parathyroid extract. He was led to make a trial of this by the reading of articles by Dr. H. H. Scott, published in the BRITISH MEDICAL JOURNAL of December 15th, 1923 (p. 1135), and in that of August 23rd, 1924 (p. 305). The case affords a good example of the rapidity with which the condition clears up when treatment is undertaken in the early stages of the disease.

The patient was an American, a school teacher, aged 28, who had been in Malaya four and a half years. The disease started in June, 1924, with diarrhoea, which was checked, but not cured, by intestinal antiseptics. There were sometimes as many as six motions daily, but usually two or three; they were light in colour, frothy, large, and bubbly. She had lost 16 lb. in weight in ten weeks before coming to hospital, and the tongue was sore and red at the edges and tip. On September 3rd she passed an "enormous, almost white, stool." The following day she was put to bed and given milk 6 oz., with lime water 2 oz., every six hours, and parathyroid extract gr. 1/10 twice daily. On September 9th "all diarrhoea and discomfort had ceased; the stool was formed and regaining colour." Six days later (September 15th) the tongue was no longer sore or red, there was only one (normal) motion daily, and the patient was taking chicken, eggs, milk, milk pudding, bread-and-butter, and tea. On the 23rd (nineteen days after commencing the treatment) she left hospital at her own request to resume work; she was "taking a fair amount of exercise without fatigue; stools were normal and she had regained weight." She was told to continue taking the parathyroid once daily for another ten days.

Reports of Societies.

INTRACAPSULAR EXTRACTION OF SENILE CATARACT.

At a meeting of the Medico-Chirurgical Society of Edinburgh on November 5th, the President, Sir David Wallace, in the chair, Dr. A. H. H. Sinclair read a paper on the intracapsular extraction of senile cataract.

Dr. Sinclair began with a full summary of the various stages in the development of extraction operations for cataract, and pointed out that the special type of operation under consideration was the complete removal of the cataract. This might be effected by capsulotomy (or capsulectomy) or intracapsular extraction. He first referred to Pagenstecher's method, then to Colonel Smith's well known work, and thirdly to the vacuum pump method of Vard Hulen and Barraquer. The fourth method discussed was the use of blunt forceps for intracapsular extraction. Kalt of Paris and Stanculeanu of Bucarest both introduced types of blunt forceps, and the results obtained by the latter operator were described, and also his method of case selection. Reference was also made to Knapp's results in New York. Dr. Sinclair then described his own experiences with intracapsular extraction with forceps. Careful preliminary investigations were carried out, and the region of the eye was made as aseptic as possible. A detailed description of Dr. Sinclair's modification of Kalt's forceps was given and illustrated by lantern slides. The technique of the operation was described in detail; up to the present time an iridectomy was performed just before using the extraction forceps. The various points in the operation were illustrated by lantern slides, and the operation details were made most realistic by a cinematograph demonstration.

Finally, a short note was given as to his results up to date. The operation had been performed on 52 patients, and in sixteen the vision obtained was 6/6, in eighteen 6/9, in six 6/12, in seven 6/18, in two 6/24 (one improved to 6/9), in two 6/36. One of the patients with 6/36 had retinal haemorrhages at the macula, and one patient lost the sight of the eye from severe infection. Vitreous loss occurred in 7 cases; in two of these cases the vision was 6/9, in two 6/18, in two 6/24, and in one 6/36 when taken shortly after operation. In 18 cases the capsule ruptured prior to complete delivery. In 3 cases the toothless forceps failed to grasp the capsule, owing to the swollen lens rendering the capsule too tense, and capsulotomy was performed. In conclusion Dr. Sinclair said:

"In intracapsular extraction by this method the procedure is, to begin with, the same as that in the capsulectomy operation, excepting that the incision is slightly larger. Iridectomy, when performed, is the same. The introduction of the forceps into the anterior chamber of the eye is the same, but after this stage the technique is distinct from that of the capsulectomy operation. This is the least traumatic of the intracapsular methods, and the apparatus is of the simplest."

Dr. W. G. Sym had been in the habit of performing cataract operations by removing a considerable portion of the anterior capsule, and had found the operation very satisfactory. He considered iridectomy would be necessary in Dr. Sinclair's operation, and he had a great objection to this procedure.

Dr. J. V. Paterson considered the chief danger of the operation would be the risk of loss of vitreous, which had been largely avoided by Dr. Sinclair's dexterity. He referred to the excellent results obtained by Dr. G. Mackay with capsulotomy, and later capsulectomy.

Vaccine Treatment of Ringworm and Favus.

Dr. R. Cranston Low read a paper on immunity and sensitization in ringworm and favus, and the treatment of these diseases with vaccines.

Dr. Low drew attention to the fact that these diseases not only produced a local skin lesion, but also that changes took place in the body as a result of these infections. He referred to Neisser and Plato's work in 1902, when they prepared an extract of ringworm fungus called "trichophytin," and by inoculating sufferers from deep-seated ringworm produced a local reaction, although no such reaction was produced in the healthy individual. No reaction occurred in the superficial type of the disease. Following this work animal experiments were started by several Continental workers. It was found that guinea-pigs and rabbits could be infected with ringworm and favus, the diseases running a fairly definite course and leaving behind sensitiveness of the skin. Reinfection usually resulted in the disease running a modified course. *Trichophyton gypseum* and *Achorion quinckeanum* were found to infect animals more readily than the other fungi of these groups. Sensitization and immunity were not strongly specific to each fungus; this showed that the favus and ringworm were closely allied biologically. Skin inoculation—deep-seated—was the only way of producing immunity: intraperitoneal and subcutaneous injections were useless. Only living fungus injections could produce immunity, and therefore they were analogous to tuberculosis. He referred to the observations of Saeves, who showed that inoculations of *Trichophyton gypseum* would produce a clinical lesion at almost every attempt, while *Microsporon audouini* gave no clinical lesion, although the organism could be recovered from the inoculated skin fifteen days later. This latter fungus had a poor power of sensitization. Efforts to produce active immunity with injections of trichophytin and dead fungus extracts rubbed into the skin gave unsatisfactory results, since many failed to produce immunity. Attempts to induce passive immunity, using the serums of animals so infected, had failed. Reference was made to complement fixation tests. Dr. Low then described some personal experiences with the cuti-reaction which might occur in favus and ringworm. Preparations were made from small-spored fungus = "microsporin," large-spored fungus = "trichophytin," and favus fungus = "favin." The method of preparation was given in detail. These extracts were used for diagnostic purposes in cases of ringworm and favus. The extracts were classed A (extracellular toxins), B (intracellular toxins), and C (crushed masses of fungus). Von Pirquet skin tests were made on the left arm. The results were as follows: 11 cases of tinea capitis, due to *Microsporon audouini*, gave 4 absolutely negative reactions, 6 doubtful and probably negative, and 1 positive with microsporin B and C. Three cases of ordinary tinea capitis (large-spore fungus) gave negative results with trichophytin A, B, and C. One case of inflamed large-spore tinea capitis gave a doubtful reaction. One case of large-spore tinea corporis gave a negative result; 7 cases of favus due to *Achorion schönleinii* were tested with favin A, B, and C, 4 being negative, 2 doubtful, and 1 positive. These results, although disappointing, agreed to some extent with those of Sutter, who obtained 5 positives out of 150 tested. No great difference was found between A, B, and C, although the extracellular extracts gave less obvious results than the other two. These skin tests could therefore not be used for diagnostic purposes in doubtful cases.

Dr. Low next referred to the treatment of ringworm and favus with fungus vaccines. In 1915 he treated a few cases of small-spored ringworm of the scalp with "microsporin" prepared as for the cuti-reactions; subcutaneous injections were given in increasing doses. The results were so disappointing that the method was discontinued after only five cases had been treated. Marked local reactions were produced, and subsequent inoculations caused the previously injected areas to show focal changes. In no case was a focal reaction produced in a scalp lesion, and in two cases the general health suffered. Dr. Low considered that it was not likely that fungus vaccines would be of use in the treatment of ringworm of the scalp. In conclusion, he said that all the work on fungus infections of the skin went to show that a deep infection with a living fungus could produce changes in the blood and skin which were not true anaphylaxis, but a form of sensitization. These changes were exactly analogous to those produced in diseases such as tubercle and syphilis. In superficial fungus infections no sensitization of the skin occurred, and that was the reason why ordinary ringworm of the scalp showed no tendency to cure.

RADIOGRAPHY OF THE THORAX.

At a meeting of the Section of Electro-Therapeutics of the Royal Society of Medicine on November 21st, the President, Dr. Stanley Melville, in the chair, Dr. E. Rist of Paris read a paper on the respiratory displacements of the mediastinum and some allied phenomena.

Dr. Rist stated that although permanent displacements of the mediastinum, to the right or to the left, as a result of some pathological condition in the thorax had been recognized for many years, it was not until the introduction of fluoroscopic methods of examination that rhythmical respiratory excursions of the organs of the mediastinum were discovered. The first mention of this appeared in a paper by Jacobsen in 1899, and subsequent writers had studied the matter in great detail. The three main pathological conditions under which this movement of the mediastinal contents could be observed were stenosis of a main bronchus, fibrosis of one or other lung, and pneumothorax. The lecturer proceeded to describe the variations from the normal radiographic appearances which occurred in these conditions. All the mediastinal contents could be seen to move towards one or other side of the chest, and since the parts near the diaphragm moved most a pendulum-like movement was produced. This movement was often very conspicuous, the heart frequently showing a difference of an inch in the positions of its borders at the end of inspiration and of expiration. In stenosis of a main bronchus both sides of the thorax expanded and produced an equal negative pressure on both sides; on the diseased side this pressure was not quickly reduced owing to the deficient air entry, and the mediastinum consequently moved towards the diseased side on inspiration, returning to the mid-line on expiration. If the patient took a deep breath and held it the mediastinum at first moved to the diseased side and gradually moved back as air slowly entered the diseased lung, and the pressure on both sides became equal. Stenosis of a main bronchus was, however, comparatively rare, and the two other causes of respiratory displacement of the mediastinum were more frequently met with.

In unilateral fibrosis, tuberculous or otherwise, the affected lung was shrunken, collapsed, and less easily distended during inspiration. Hence the inspiratory expansion of the thorax was not used on the diseased side in expanding the lung, but was transmitted to the mediastinum, which moved towards the diseased side; this inspiratory movement of the mediastinum was the most reliable sign of unilateral fibrosis. It occurred quite independently of the presence of adhesions between the lung and the chest wall. Respiratory displacement of the mediastinum was often seen in spontaneous, and always in artificial, pneumothorax. The pressure of gas in a closed chamber on the diseased side tended to push the mediastinum towards the sound side, where the gas was in an open chamber as represented by the sound lung. Another interesting phenomenon occurring in pneumothorax was the "paradoxical movement of the diaphragm," first described in 1898. In cases of pneumothorax with a slight effusion the upper level of the fluid remained horizontal; it moved up and down with respiration, but in an opposite direction to the excursion of the diaphragm on the sound side. Dr. Rist dealt with some erroneous views put forward to explain this, such as the theory that the weight of the fluid turned the convexity of the diaphragm downwards, which, he said, could not occur on the right side because of the upward pressure of the liver. The sharp line of the diaphragm, so easily seen by radiographic examination on the left side, never altered its curve in cases of left-sided hydropneumothorax. The theory of paralysis of the diaphragm was also an unlikely explanation, for normal movements of the diaphragm were seen in these cases: in certain cases of artificial pneumothorax with adhesions at the base of the lung no fluid was in contact with the diaphragm, and yet this paradoxical movement occurred. The term "paradoxical" was a misnomer: the alteration in the level of the fluid was brought about by the respiratory movements of the mediastinum altering the dimensions of the closed chamber in which gas and fluid were present; the alteration in the level of the fluid was therefore no paradox, but a physical phenomenon. In cases of collapsed lung following pneumothorax a complicated series of movements could be observed on fluoroscopic examination.

The lung took part in the mediastinal excursion; it showed a respiratory distension, a systolic distension, and also a curious regular vibratory movement about two or three times the rate of the heart. All these movements had been seen separately and conjointly, and well deserved further attention. The movements of the heart were curiously affected in pneumothorax: displacement of the heart *in toto* towards the sound side took place on inspiration. If, for example, a left-sided pneumothorax was present, a greatly increased amplitude in the movements of the left edge of the heart could be observed; this was probably due to the removal of the "brake" action of the lung by the presence of a layer of air between the lung and the pericardium. There was no functional disturbance of the heart in these cases, and the electrocardiogram was normal. In cases of bilateral fibrosis of the lungs heart failure was a common cause of death; this was not due, in Dr. Rist's opinion, to the increased pressure in the lung capillaries, since the right heart was often not hypertrophied, but was caused by the traction on both sides of the mediastinum exerted by the expansion of the thorax through the contracted lungs, and the heart gave way under this strain on both sides. A respiratory distension of the heart could be observed. This was probably an exaggeration of the slight normal respiratory distension of the heart which was compensated by the vertical elongation of the heart brought about by the moving down of the diaphragm. Finally, Dr. Rist pleaded for closer co-operation between the clinician and the radiologist, and suggested that they might well be one and the same person.

Many of those present asked questions, to which Dr. Rist replied. Some radiographs of the thorax obtained after the injection of lipiodol were shown at the end of the meeting.

OBSERVATIONS ON CANCER CELLS IN VITRO.

At a meeting of the Section of Pathology of the Royal Society of Medicine on November 18th, Dr. T. Lumsden read a paper embodying his observations of the activities of cancer cells under laboratory conditions.

Dr. Lumsden said that normal tissue cells (*p*H 7.4 to 7.7) grew freely in pure serum and divided by typical mitosis. Cancer cells, on the other hand, migrated very actively and enlarged individually, but they only rarely divided, and then chiefly by amitotic nuclear fission. The addition of embryonic autolysed tissue or tumour extract neither increased nor diminished the growth of normal or tumour cells so long as the original fragment was present, except in so far as they acted as buffers should such be required. No medium was at present available in which cancer cells could be cultivated indefinitely, but for the study of surviving tumour tissue serum was convenient and satisfactory. The serum must not be kept for more than three weeks, since after that period, even if preserved in sealed capillary tubes, the serum deposited "asteroids"—namely, stellate crystals of calcium salts of the fatty acids—and was then useless or harmful. Cancer cells surviving in serum were all actively amoeboid. Some degenerated rapidly, setting free many naked nuclei; others progressively enlarged, and became highly resistant to infections and other adverse conditions. Thus, cells which had been severely bombarded with gamma radium rays for an hour and a half were uninjured thereby, and continued to move about actively for over a week. These large cancer cells still survived even if not re-fed for eight days, which indicated that they were not easily killed by their own waste products, and that they needed but little food or oxygen for bare subsistence. Neither the presence of normal tissues nor of red blood corpuscles altered appreciably the behaviour of these cells in serum. In such symbiotic cultures normal tissues did not grow more actively than usual, which fact did not favour the view that cancer cells contained a special growth factor for normal tissues.

Resistance to the Induction of Cancer.

Dr. J. A. Murray, in a paper on increased and diminished resistance to the induction of cancer, remarked that animals in which cancer had developed spontaneously or as the result of tarring the skin were much more refractory to the carcinogenic action of tar than normal animals. If the second tarring was begun before cancer had developed from the first tarring, a second primary carcinoma could be produced in nearly every case, and the time necessary was less than in the first instance. About the time the first primary appeared the whole animal was in a state of greater susceptibility to the carcinogenic action of tar. Certain puzzling features of cancer in man (rarity of multiple primary cancer, late regional recurrence after operation, and some statistical difficulties) fell into a rational sequence if a phase of diminished refractoriness was assumed, followed by a phase of increased refractoriness in the development of cancer in the human subject.

TREATMENT OF SENILE GANGRENE.

At a meeting of the Medical Society of London on November 24th, with the President, Dr. Eustace M. Callender, in the chair, a discussion on the treatment of senile gangrene was opened by Sir Anthony Bowlby. The disease had, he said, been long recognized, and an excellent description of it was given by Percival Pott, who had pointed out many salient features of the disease. Pott described it as being unlike mortification from other causes. It began commonly as a small black or blue spot upon one of the small toes, followed by a separation of the cuticle; the disease affected males twenty times more commonly than females, and the rich rather than the poor. Pott observed also that senile gangrene was not confined to old age, and that the gouty were peculiarly liable to it. There was little to add to Pott's description, and nothing to subtract from it, but it was necessary to consider two other forms of gangrene or threatened gangrene, which were sometimes confused with true senile gangrene. The first was gangrene due to diffuse arterial thickening, which afflicted chiefly Russian and Polish Jews, and often occurred at an early age; indeed, most of the victims died young. This form of gangrene differed from true senile gangrene in not being limited to the toes, for the fingers and the tip of the nose and ears were often similarly affected. The second was the disease known as intermittent claudication, in which gangrene was apparently threatened but only very rarely supervened. The speaker knew of one case where attacks of this kind had occurred frequently during the last twenty years, yet the patient had not yet developed gangrene.

There were three types of senile gangrene:

1. That affecting elderly men with poor circulation who suffered habitually from cold feet and suddenly got a swollen foot.
2. Pott's type, which began symmetrically or affected simultaneously two or more toes of one foot and slowly spread to other toes, but remained limited to the toes.
3. A type which began in the toes and spread rapidly to the dorsum of the foot.

In every case Sir Anthony Bowlby held that one or both of the tibial arteries was calcareous, as *x* rays would demonstrate, and had become occluded. The treatment he adopted depended upon the type. Type I was due to sudden occlusion of the artery by a thrombus; in such cases it was wise to wait. So long as sensation remained in the foot there was a hope of recovery by the establishment of a collateral circulation, but amputation was called for when sensation was definitely lost. In Type 2 he waited so long as the gangrene remained dry, but Type 3 called for amputation without delay. Whilst waiting he administered opium, which promoted the establishment of the collateral circulation by causing dilatation of the capillaries as well as relieving the pain. Beyond this there was little to be done except to keep the part warm and dry and elevated. As regards the site of amputation, he expressed a preference for amputation above the knee, where the single vessel which supplied the leg, the superficial femoral, was less likely to be affected by calcareous degeneration. He was aware that cases had done well with amputation below the knee, but he had two objections to this site—first, that the flaps might slough, and, secondly, that it was difficult, if not impossible, to t the vessels, which simply broke away in the grasp of t clamps.

Mr. Sampson Handley agreed with the opener in believin that senile gangrene was due to fixed organic changes in th arteries, but considered that there was an added eleme of vaso-constriction of nervous origin. Leriche had show that by removing the outer coat from 1 cm. of the ma artery a vaso-dilator effect was produced in the limb belo the site of operation which lasted for some considerabl time. It had occurred to the speaker that alcohol injectio of the outer coat would have a similar effect and be easie to perform. He had an opportunity of trying the effec of this in an old lady admitted to the Middlesex Hospita exhibiting gangrene of all the toes and a portion of th dorsum of the right foot. No pulse could be felt in th femoral or popliteal vessels of the affected side, although a pulse was readily felt in those of the other side. Th gangrene remained dry for three weeks, but finally becam moist. He then exposed the femoral artery in Hunter' canal and injected a few minims of alcohol into the outer coat. On the following day the patient experienced con siderable relief from pain, and the blue coloration gradually disappeared from the dorsum of the foot, the temperatur of which was raised by 2° C. The toes finally dropped off and the foot healed up, and had remained healed for twelv months. Coloured drawings of these changes were exhibited on the epidiascope. The speaker had tried this method in Raynaud's disease, but had found it less successful. In another case of senile gangrene in which half the foot was affected he employed the alcohol injection, and then per formed a Syme's amputation successfully, relying upon the injection to prevent sloughing of the flap. It was interesting to note that Lister, in the third Huxley Lecture, had shown that the nerves controlling vaso-dilatation and vaso-constriction ran along the main artery, so that the temperature of the limb was maintained even when all structures except the artery were divided. He had pointed this out to the late Sir William Bayliss, who said that the nerves joined the artery at different levels. The speaker was inclined to think that individual variations in the level at which the nerves joined the vessel might account for the variation in the effect of alcohol injection in different subjects. He claimed only for alcohol injection that it limited the gangrene.

The President described a case in which senile gangrene followed upon the confinement to bed with influenzal pneumonia of an elderly man. He could not help feeling that the gangrene was due to keeping still. The toes dropped off, and the patient lived a further three years. He would be glad to hear suggestions for preventing such occurrences, by citrating the blood or otherwise.

Dr. Parkes Weber thought that senile gangrene was often preceded by intermittent claudication. In such cases sympathectomy was indicated. The difficulty was to distinguish the cases of intermittent claudication which did not go on to gangrene. He was inclined to think intermittent claudication did not progress to gangrene when bilateral or when the foot did not get red and painful if allowed to hang. In these cases the causative lesion was an atheroma of the aorta and common iliac arteries.

Mr. J. E. H. Roberts agreed with the opener in defining senile gangrene as that following calcareous degeneration of the arteries, and inquired whether such calcification was demonstrated in Mr. Sampson Handley's cases. When performing amputation for this condition he followed the artery up until it was safe to tie it, and did not use a tourniquet. He had tried sympathectomy in three cases of thrombo-angeitis, but without success, and recently he had read of some work in America which showed that the essential feature of this disease was an increase in the viscosity of the blood. When premonitory symptoms of senile gangrene were exhibited the circulation should be stimulated by gentle massage, avoiding injury to the vessels, and mild physical exercises.

Mr. Sampson Handley, in reply, said that the exposed vessels were cord-like and did not pulsate, and, he thought, genuinely calcified. It was for this reason that he had employed alcohol injection, for it would have been

impossible to perform Leriche's operation. The ages of his two patients were 69 and 76 years respectively.

Sir Anthony Bowlby congratulated Mr. Handley on his results, and considered that sympathectomy or alcohol injections acted similarly to opium. He added that the glycosuria so frequently associated with senile gangrene was an effect and not the cause of the gangrene, and differed from true diabetes in that none of the other symptoms, such as thirst, polyuria, and the dry red tongue, were absent. In true diabetic gangrene the outlook was, of course, very bad.

PREVENTIVE HYGIENE IN PUBLIC SCHOOLS.

At a meeting of the Medical Officers of Schools' Association on November 21st, Dr. L. R. Lempriere, who was re-elected president of the association, gave an address on preventive hygiene in public schools, based on twenty years' experience as resident medical officer at Haileybury.

Dr. Lempriere said that his impression was that there was a greater amount of sickness and minor ailments and that the general physique was lower than was the case twenty years ago. Public schools now admitted boys of poorer constitution than formerly, but although a boy might be in and out of the sick-house for the first year or two of his school life he gradually developed resistance and strength. The speaker had gone through the records of his college for the last three decades, and these he presented in a tabular form to the meeting. The incidence of measles, rubella, and varicella was very much the same during the period 1914-23 as during the two previous decades. Rubella was peculiar in its varied infectivity, sometimes flooding the school, and at other times, even with a peculiarly susceptible population, failing to spread. Measles always spread; he did not believe in the occurrence of single outbreaks of measles. Varicella was very common, and was very frequently single, and mumps was almost equally common, and apparently more often single than varicella. Among non-infectious complaints he had found an enormous fall in the incidence of tonsillitis, which formerly was a very real scourge. The improvement followed a reorganization of the drainage at the school in 1906, with the substitution of water for earth closets; these latter had actually been within the building. Impetigo, in so severe a form as to demand in-patient treatment, had almost gone, although in a mild form it was fairly persistent. He attributed the diminution to the installation of new drying rooms and to the more thorough cleansing of blankets. Conjunctivitis also had gone, largely, he thought, owing to great improvements in the swimming bath, more frequent renewals of water, and the use of copper sulphate. Colonic and gastric irritation had largely disappeared with better ordering of dietary. Dental conditions had improved, and multiple caries was now very rare. Appendicitis was very much more common than formerly. He had also seen in recent years a considerable number of cases of constipation requiring repeated enemata. A troublesome condition which had perplexed him lately was tinea cruris, in which the tendency to reinfection was very great.

The high incidence of influenza and of pyrexia of unknown origin was next discussed. True epidemic influenza was beyond the control of the school medical officer, but this ought not to apply to that most persistent of endemic conditions, the group of cases comprehended in the term "P.U.O." This was the cause of more loss of work and play and more interference with the boy's life than all the other ailments put together. Broadly speaking, the types were naso-pharyngeal and gastro-intestinal, and the complications of the former type were very numerous, the chief of them bronchitis, and the next otitis. Of sixteen mastoid operations which had been done during his experience of the school, eight were due to P.U.O. and eight to measles. The essential predisposing cause was uncleanliness, first of the individual with regard to his naso-pharyngeal or his gastro-intestinal tract, and then of the surroundings. To combat this condition he first of all instituted nasal drill. The boys were instructed to take in a deep breath through the mouth and then blow out on to their handkerchiefs without letting the handkerchief touch the nose. This was done by all the lower and middle school every morning. It was looked upon at first with some amusement, and tolerated as a fad of the school medical officer. Much less popular was another ordinance of his—a run of 300 yards before early school and chapel. Other features of the campaign against these disabling conditions were the banishment of dust and dirt, the systematic enforcement of open windows in classrooms and dormitories, and, where possible, the use of prophylactic vaccines.

With regard to school games, Dr. Lempriere was of opinion that there should be one day in the week on which games were not compulsory, although the boy should be allowed to play if he wished. There was a tendency for school captains to work their teams too hard. As to bathing, half an hour a day in fresh water should be the absolute maximum. Short of this time, the bath might refresh; longer than this, it was likely to exhaust. Up to the age of 16 at least ten hours should be spent in bed, though there would be many possible exceptions to this rule in consequence of evening concerts, society meetings, and private tuition. With regard to loss of weight during term, the bigger boys of 16 and over lost weight, often with advantage; among the smaller boys it was a different matter; here loss of weight meant, as a rule, some form of overstrain, generally physical. As to food, besides the principal meat meal, some other hot meal was now provided. The food values now were 3,563 calories, as against 2,748 in 1893. There was, however, a good deal of waste and food-faddism in a public school. The refusal of good food was more noticeable among the small boys, who turned up their noses at college fare, but were ready to eat sweets and cakes at any time of day. He advocated the general use of stone-ground flour. Some food and drink before the first lesson in school should be compulsory. From November to April there should be no early morning school. A certain number of one and a half hour lesson periods were retained; he thought this was too long for the smaller boys. A public school with a resident medical officer should be the ideal place for reform and improvement, but the medical officer often found himself up against the conservatism of institutions. In his own case, however, his council had always been most sympathetic to his suggestions so far as they were practicable, and no medical officer could have served under better headmasters.

In the course of a brief discussion, Dr. G. E. Friend of Christ's Hospital said that he had worked out some figures for his own school as to the incidence of the various complaints, and they tallied to a great extent with the figures for Haileybury. During the last ten years he had had fewer cases of measles, and no case at all during the last four years. He had had no trouble from tinea cruris, possibly owing to the fact that no carpets or rugs were used on the college floors, which all had a sanitary polish. Dr. James Kerr remarked on the absence of rheumatism from Dr. Lempriere's list, and suggested that a considerable number of the "P.U.O." cases might be definitely rheumatic. Dr. Elwin Nash pointed out that, in addition to wholesomeness of food, good cooking was very important in a school, and the change from a rather monotonous to a more varied diet might have quite a remarkable effect upon school hygiene.

PSYCHOLOGICAL CAUSES OF DISEASE.

At a meeting of the Liverpool Medical Institution on November 20th Dr. W. Johnson read a paper on mental border-line cases in their relation to general medicine and surgery, referring to the light which recent psychological progress had thrown on the psychoneuroses. He reviewed the physical manifestations which were the result of emotional states, and pointed out that many patients with these symptoms were treated for medical or surgical conditions, without any attention being directed to the disordered emotional condition which was the real cause. Cases could be grouped into four types—abdominal, cardiac, cephalic, and (in women) pelvic—according to the physical symptoms which predominated. Surgical treatment should be avoided, and had in some instances proved disastrous. The essential basis of treatment was the application of the principles of mental hygiene.

Dr. A. Mainwaring-White remarked on the great importance of this subject, particularly to the general practitioner. He believed that hereditary tendencies existed,

and that shock, emotion, and fatigue were exciting causes, but he was surprised that there had been no mention of organic disease as the underlying causative factor, and gave as illustrations *B. coli* infection of the urine, infected teeth, and other septic conditions. As regards treatment, he appreciated the value of suggestion, but he had derived very little success from the administration of suprarenal extract. In those patients with a subnormal temperature and a slow pulse he had frequently found benefit result from using thyroid extract.

Dr. A. E. Davis believed that the great majority of neuroses and psychoneuroses had their origin in the emotion of fear. He was opposed to the Freudian theory of a universal sexual basis in these cases, and thought that dogmatic and unproven dicta such as Freud's statement, "In a normal *vita sexualis* no neurosis is possible," were positively detrimental to the proper study and advancement of psychological knowledge. Of the two primitive instincts, that of self-preservation was of greater potency than the sexual. Fear was the essence of the instinct of self-preservation, and was a biological necessity for the preservation of the race or species. By mental analysis of the child mind—the emotional and primitive mind in development as contrasted with the later developed and acquired powers of the conscious or reasoning mind—one was enabled to trace fear, together with some exciting factor, as being the cause of psychoneuroses. This other factor might be external, such as a mental trauma, or internal and toxic in character. It was true that the sexual instinct obtruded frequently in the form of masturbation, but if this conflict was submitted to further analysis the symptoms would be found to be due to the sense of shame and the fear of harmful consequences, fear being predominant. Phobias and neurotic symptoms could be traced either to fear or to the irritability and hyperacuity of the senses due to exhaustion of nervous centres by long-continued stress and drain of nervous energy. They were not symptoms of disease, but manifestations of tiredness and exhaustion, and they could be remedied by rest—mental rest—by removing the doubt. The psychoneuroses were purely the expressions of emotional disturbances, and origins must be sought in, and treatment directed to, the emotional level, or the so-called subconscious mind.

Retinal Arterio-sclerosis.

Mr. Bernard Chavasse, in a note on arterio-sclerosis and the fundus oculi, said that the sphygmomanometer required to be supplemented by the ophthalmoscope, which, since its electrification, was making a strong bid for more frequent use in general practice. He exhibited a series of autochrome lantern slides of paintings illustrating the main features of arterio-sclerosis as seen under magnification in the living retinal vessels. He demonstrated the well known "copper wire" and "silver wire" arteries, "beading" of the streak of reflected light on the arteries, "corkscrew" arteries and capillaries, opacification of the arterial wall, "pipe-stem" sheathing of arteries, irregularity of the arterial lumen, as well as the later and final changes both in the vessels and the fundus as a whole. Dealing with the appearances at arterio-venous crossings, he said that the interpretation of the S-shaped bend produced in a vein by an overlying arterio-sclerotic artery—a sign which had been described as the most important of all the signs of retinal arterio-sclerosis—needed qualification. He had observed it not infrequently in healthy children. The necessary qualifications were the veiling of the vein by the ghostly arterial wall, the failure of the vein to shine darkly through the overlying arterial column, and a diminution in the calibre of the vein at the actual point of crossing. With these qualifications, or at least in the presence of other signs of arterio-sclerosis in other parts of the fundus, he agreed with Foster Moore that the sign was of great significance. He discussed its mechanical causation, and suggested that the earliest sign by which one could hope to recognize it was the absence of that optical illusion which causes the two halves of the more remote limb of any X-shaped figure to appear out of proper alignment. This feature, however, he felt bound to admit was not one on which much reliance could be placed, without such special aids as the use of red-free light and special methods giving high magnifications. The appearance of "banking" of blood in a vein, owing to its obstruction by an overlying sclerosed artery, was one which he thought he had sometimes seen, but he had been unable to satisfy himself that the appearance was not in reality due to the porpoise-like course of a vein in and half out of retinal nerve fibres which were assuming the cloudiness which was also a feature of arterio-sclerosis.

RECTAL CARCINOMA IN PREGNANCY.

A meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland was held on November 14th, when the President, Mr. R. C. B. Maunsell, read a paper describing two cases of carcinoma of the rectum, complicated by pregnancy and treated by excision.

In the first patient, a woman aged 27, who was three months pregnant, the growth was removed by the perineal route after a preliminary colostomy, and the patient was subsequently delivered of a full-time healthy child. In the second case the woman was 38 years old and three months pregnant of her eleventh child. In this case the combined perineal and abdominal route was used for the removal of the growth, and this pregnancy also ended normally in the birth of a living child.

Mr. Seton Pringle had once removed the rectum during pregnancy. In this case the patient had been pregnant over four months, and it would have been almost impossible to deal with the growth without first removing the uterus, and this he did. He was interested to hear that the President opened the colon before proceeding with the pelvic operation. Mr. Pringle thought that this would incur the danger of infection, and that it was better to leave the opening of the upper segment till the conclusion of the abdominal part of the operation. He considered the only radical operation was the combined abdominal and perineal. If the patient was young, and in good condition, he used the combined method, but in elderly people he performed the two-stage perineal operation as described by the President. In cases of rectal cancer, or of cancer low down in the colon, the sphincters should never be preserved.

Mr. Henry Stokes some months ago had performed the two-stage operation on a fairly young woman for cancer of the rectum. She had previously had one child, and thirteen months after the operation she had another child. He believed that in such cases, if further pregnancies occurred after the operation, there was no risk of sepsis.

Dr. Bethel Solomons regretted that the profession in Dublin had not been informed that two such rare operations were to be performed. It was strange that in obstetrical textbooks so little space was devoted to the subject of cancer of the rectum as a complication of pregnancy. Usually there were a few lines stating that Caesarean section was the treatment. The excellence of the results in the cases reported was a conclusive proof that extirpation should be practised when possible. In the second case, had radical operation been refused, Caesarean section at term would have been the only method of treatment. The literature on the subject was very scanty. The only series of cases he could trace was in a paper in *Acta Gynaecologica Scandinavica*, 1922, i, pp. 445-458.

Mr. C. J. MacAuley agreed with the President in preferring rectus colostomy to iliac colostomy, which would have approached too near the anterior superior spine. He thought that the abdomino-perineal operation might be performed in people over 60; very often in young people there was more tendency to widespread growth, and provided that old people were in good condition he saw no reason why they should not stand the operation. A year and a half ago he had performed an abdomino-perineal operation on a man of 65; he had stood the operation well, and was now doing very satisfactorily. Much depended on the patient's physique, and the circumstances in every case were different. He, personally, never attempted to preserve the sphincters.

Mr. Arthur Chance had recently seen ten cases of carcinoma of the rectum operated on at the Mayo Clinic. Fourteen days after a preliminary colostomy a perineal incision was made. The first incision was oblique and

high up in the lateral wall of the abdomen. The muscles there were very deep, and therefore good adhesion was obtained. This opening was very conveniently situated for a colostomy belt. The incision was made large enough to admit the hand, and the liver and the pelvis were explored. The subsequent operation was performed with the patient lying on the face, and under trans-sacral anaesthesia. The patients never complained of pain, unless it was necessary to pull down the peritoneum.

Mr. W. PEARSON thought every case of excision of the rectum should be dealt with by preliminary colostomy. In cases of rectal cancer he believed in perineal removal, unless there was some special indication for the double operation. In males the urethra was a danger. It was very difficult to keep these cases aseptic. The combined operation could be performed all in one stage, or in two stages; although it took a little longer he thought it was better to do it in one stage. In thin patients the operation was much easier than in very fat patients.

COMPLICATIONS OF GONORRHOEA IN WOMEN.

A MEETING of the London Association of the Medical Women's Federation was held at the Elizabeth Garrett Anderson Hospital on November 11th, Miss M. CHADBURN, the President, being in the chair, when Dr. MORNA RAWLINS read a paper on complications of gonorrhoea and their treatment.

Dr. Rawlins said that the gonorrhoeal infections of the uterine adnexa and gonococcal rheumatism were the most dreaded complications. She believed that the tubes and ovaries were affected slightly in more women infected with gonorrhoea than was generally realized. Before pyosalpinx developed the patient should be kept in bed and on a light diet. She recommended salt douches, 2 ounces to a pint, which should be given slowly and as hot as could comfortably be borne. The douches should be followed by the insertion of glycerin of ichthyol and glycerin pessaries (10 per cent.); hot fomentations to the abdomen might relieve pain. She had lately tried injections of sulfarsenol with excellent results. The injections were given intramuscularly into the hip, beginning with a dose of 0.9 cg. and increasing to 0.18 cg. or more daily for four or five days. Colonel Harrison had found marked alleviation of pain after diathermy, the temperature being 115° in the vagina and cervix. If both tubes had to be excised she advised that the uterus and the cervix should also be removed. If a gonorrhoeal case was treated early and effectively metastatic gonorrhoea should not occur. Joint or muscular conditions and also synovitis were usually accompanied by cardiac disturbance which might become the most disturbing element in the case. In all forms of metastatic gonorrhoea the treatment of the primary focus was of the utmost importance. Dr. Rawlins did not approve of splinting in gonococcal arthritis, but applied lint soaked in ichthyol and glycerin over the painful part, kept in place by a pad of cotton-wool and a light bandage. If the patient slept better with a splint she allowed one for the night only. Immobilization of the part, even in the acute stage, favoured ankylosis: pain deterred the patient from harmful movements. Dr. Rawlins put these patients on a daily course of collosol manganese 1 c.cm. intramuscularly; great relief was obtained from this and from heat applied locally. When the pyrexia and pain ceased the injections were stopped, and massage and passive movements were started. Vaccines should only be used with the greatest caution in joint cases and after the acute stage. Salicylates were useless in gonorrhoeal rheumatism, but collosol sulphur was usefully given by the mouth with meals.

Dr. TINDAL-ROBERTSON had seen few cases of established gonorrhoeal arthritis, but many patients complained of pain in the ankles and other joints, centred in the tendons and fibrous sheaths. Vaccines were useless; sulphur by the mouth seemed to help, but on the whole local treatment alone alleviated these conditions. Retroflexion was often found in chronic cases after vaginal discharge; sometimes the uterus was fixed, but more often it was lightly tethered. She had found that this discharge did not cease until the uterus was placed in a position where free drainage was possible.

Dr. FRANCES HUXLEY said that in many chronic cases of adnexal infection the original infection had been insidious and the symptoms hardly noticed, though the tubes might nevertheless be blocked. She recommended medical treatment, unless there was misplacement, when there was any chance of saving the tubes; otherwise she practised removal of the whole tract. Salpingostomy was performed in certain cases, rather to encourage the patient than in the conviction that pregnancy was likely to ensue. She treated acute cases on medical lines when the differential diagnosis from appendicitis had been established.

Dr. EVA WHITE distinguished medical diathermy, which aimed at producing heat without damage to tissues, from surgical diathermy, which aimed at coagulation. The former was used with success in chronic gonorrhoea. The gonococcus was very susceptible to even moderate heat; probably 105° F. would kill it, and the tissues could be safely heated to 115° F. by diathermy. One electrode should be placed in the cervix and the other in the urethra, the rectum, or on the abdomen. The urethral site was useful as a sensitive indicator of heat. Another use of diathermy was in general treatment, to stimulate circulation and elimination, facilitating penetration of drugs given by the mouth. The leucodescent lamp had proved very useful in her hands and appeared to be sedative.

Dr. AGNES SAVILL said that in intractable cases local ionization of urethra and cervix had proved of great value. At St. Bartholomew's Hospital she understood that good results in tube cases and even in arthritic conditions had been obtained by diathermy.

Dr. VIOLET RUSSELL had recently treated four or five patients with tubal inflammation with sulfarsenol, 12 cg. intramuscularly, with most encouraging results, though the condition had proved refractory to injections of collosol manganese.

Dr. GLADYS SANDES had found that solid silver nitrate fused into a rod was very useful in cases of infection of Skene's tubules. Patients with a Bartholin abscess who could not lie up were conveniently treated by packing the cavity with narrow ribbon gauze impregnated with collosol silver; this seemed to prevent pockets forming.

Dr. LOUISA MARTINDALE had found surgical diathermy very successful in a case of gonorrhoeal warts. Dr. DOROTHEA TAYLOR asked what was the relative value of films and cultures in the diagnosis of chronic cases. Miss ESTHER RICKARDS reported success with mercury succinate in these cases. Miss A. BLOOMFIELD said that in not more than one in twenty patients could the gonococcus be detected. It was her custom to treat for gonorrhoea if pus was present in the urethra or cervix.

The PRESIDENT commented on the fact that many cases of acute gonorrhoea were acute abdominal cases and exploration was necessary for diagnosis. She generally confined her treatment in these cases to washing out the tubes and draining Douglas's pouch by the vagina. It would be interesting to ascertain the number of cases in which, when the tubes were saved, pregnancy eventuated; of the many she had saved only two pregnancies were known to have resulted.

Dr. RAWLINS, replying, said that diathermy should have a great future in these cases. She herself had found the complement fixation test very satisfactory, but the reaction was not manifest until six weeks at least after infection, and did not become negative until about two months after vaccine treatment. She agreed that a silver dressing was the most useful for a Bartholin abscess. She treated gonorrhoeal warts with the cautery, keeping the parts very dry; if the warts were very numerous she cut off the heads with a sharp curette and then scraped off the stumps. Cultures and films were more likely to be positive if taken just after a menstrual period. If the pus stained very brightly and no other organisms were present, the case was suggestive of gonorrhoea. Examination of the husband might help the decision. In establishing the fact of cure, negative films and absence of pus for six months was the ideal criterion; if only a little degenerated pus was present, not brightly staining, the patient was probably cured.

Reviews.

RHEUMATIC HEART DISEASE.

When the subject of the prevention of heart disease is at last receiving some serious attention from the medical profession, the appearance of Dr. Carey Coombs's monograph on *Rheumatic Heart Disease*[1] is particularly welcome. It is a laudable and successful attempt to deal with all the heart lesions produced by one etiological factor, and not, as is the usual method, to describe the various anatomical defects and to ascribe apparently similar lesions to their numerous causes. There seems no doubt that the latter method has hampered the accurate appreciation of the various agents which produce disease of the heart in its many forms. Attention is apt to be directed more to the effects which they produce than to the agents themselves. Further, this work is the result of personal inquiry and study continued over two decades, and is in no sense a compilation of the results of others. That it deals with the commonest of the causes of cardiac crippling, and that one the effects of which are most manifest in early life, should ensure for it careful study by all practitioners and physicians, as well as by those who are more particularly interested in the preventive aspects of the subject.

The author frankly accepts the *Diplococcus rheumaticus* as the cause of rheumatic fever in human beings, though he considers that there still remains much work to be done to determine "its relation to other human streptococci and the conditions under which it acquires its peculiar pathogenic properties and the means by which it enters on its morbific career." The characteristic rheumatic lesion, the submiliary nodule, which occurs in subcutaneous tissue, synovial membrane, pia mater, and kidney, is described in detail as it occurs in pericardium, myocardium, and endocardium. Its effect on these parts is followed, and a lucid explanation is offered for the different results produced in acute fulminating cases of pancarditis and the more chronic cases which survive for very many years.

Considerable attention is devoted to the interpretation of symptoms, physical signs, and alterations of the pulse found at various stages of rheumatic carditis, but the amount of detail which is incorporated in these pages does not obscure the breadth of view exhibited in assessing their significance. The chapters on diagnosis and prognosis receive the same masterly treatment which is characteristic of the book as a whole. In dealing with prognosis the conclusions are based mainly on the results of the "follow up" of between 600 and 700 cases seen by the author in Bristol and labelled "cardiac rheumatism." Conclusions based on the disease as seen by one individual, in one district, and over a limited period of time may be open to criticism if the results are to be applied to the country as a whole. This the author recognizes, and he considers that the severer grades of infection are seen less frequently in Bristol than in London. With this reservation we feel that his observations will materially assist the reader to assess the course of the disease in any patient.

Treatment is discussed along two main lines—aid to the heart by rest or suitable occupation to overcome the mechanical disadvantage arising from damaged muscle and valves, and aid to the body to overcome the assault by the organism on the tissues. For the active stage of the disease a prolonged course of salicylates is considered to be of paramount value. Tonsillectomy is discussed and the need for obtaining more information on this subject is urged; the same remarks apply to the author's attitude to the question of prolonged open-air treatment during convalescence.

The concluding chapter deals with prevention, and in it Dr. Carey Coombs puts in a strong plea for an attempt to discover the really causal conditions of the disease, the predisposing as well as the active.

For a first edition we find a remarkable absence of errors in the text. There is a useful introduction by Dr. F. J. Poynton, and also a very complete index. We consider the book a most important and able contribution to the subject of rheumatic heart disease. It is eminently practical and adapted equally for the general practitioner and for the specialist in this branch of medicine.

[1] *Rheumatic Heart Disease.* By Carey F. Coombs, M.D., F.R.C.P.Lond. With an introduction by F. J. Poynton, M.D., F.R.C.P.Lond. Bristol: John Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd. 1924. (Cr. 8vo, pp. xxiii + 376; 51 figures. 19 plates. 12s. 6d. net.)

BLOOD CHEMISTRY IN CLINICAL MEDICINE.

The Chemistry of the Blood in Clinical Medicine[2] by Dr. O. L. V. de Wesselow, chemical pathologist to St. Thomas's Hospital, London, is no mere handbook of methods of technique, nor is it a treatise on the general physiological chemistry of the blood—the author, for instance, makes no reference to any of the methods for the quantitative estimation of haemoglobin. Nevertheless, the first chapter contains one of the best and most condensed accounts of the chemical constitution of normal blood we have yet seen.

The results of the latest researches regarding both the organic and inorganic substances of healthy blood are adequately dealt with. The book is intended to instruct the biochemist who is working in a fully equipped laboratory how to solve problems of the utmost consequence for the clinician. In the preface we are told that the "chemical analysis of the blood as an integral part of the routine clinical examination in certain diseases only became possible with the development of the so-called micro-methods, that is, methods by which very minute amounts of material could be accurately and quickly estimated." The author believes that glycosuria and diabetes, renal disease, and those conditions in which there is a deviation from the normal reaction of the blood, comprise the three chief occasions on which blood analysis is required. The chapter on acidosis and alkalosis is a model of clear presentation of a chemical point of view which was non-existent when the majority of those now engaged in practice were at college. We have admirable discussions of the variations of the blood sugar in health and disease, and of nephritis, these chapters being of the highest utility. The discussion on gout is an example of the difficulty of being dogmatic even on so well recognized a clinical entity. The treatment of uric acid—the villain of the piece—is broad and judicial. Other subjects dealt with are: tetany, rickets, the lipoids of the blood, and hydraemia. Chapter XII is virtually an appendix containing practical directions for carrying out the various estimations referred to throughout the book. We miss an adequate treatment of lactic acid in blood and all that an excess of this acid means in clinical medicine, and the absence of reference to abnormal pigments in blood seems to need explanation. Dr. de Wesselow has a habit of omitting the initials before the names of research workers and authors; this may be excusable in the text, but it is annoying in the formal lists constituting the bibliography. The index is of subjects only.

[2] *The Chemistry of the Blood in Clinical Medicine.* By O. L. V. de Wesselow. London: Ernest Benn, Ltd. 1924. (Demy 8vo, pp. 255; 22 tables, 12 figures. 15s. net.)

THE NATURE OF DISEASE.

Mr. J. E. R. McDonagh's researches into the causation of syphilis have led him to conclude that there is an essential similarity in the way in which an infection or a poison attacks the host and the way in which the host resists the attack. He has chosen, therefore, the comprehensive title of *The Nature of Disease*[3] for the book he has recently written to expound his views on syphilis and problems of immunity. He appears to have laid down for himself an elaborate programme, for this volume of 320 pages is described as Part I, and he says that instead of spending time in bringing out fresh editions as new knowledge is gained by further research, he intends to publish all future investigations in other volumes which will bear the same title and be a continuation of the same study.

The book is expensive and does not prove easy reading, and therefore it would seem to be our first duty to say what it is about. This is not an easy task, for the book

[3] *The Nature of Disease.* Part I. By J. E. R. McDonagh, F.R.C.S. London: W. Heinemann (Medical Books), Ltd. 1924. (Cr. 4to, pp. 327; 59 plates. £3 3s. net.)

covers a very wide field. The general introduction sets out to give an account of the evolution of the author's views on the nature of disease in order to justify the statement that if you "study one disease in its entirety, especially syphilis, you study medicine." We are forced to study other things in these pages also, particularly a troublesome new nomenclature in the realm of physical chemistry, and to make the acquaintance of "conductors" and "lytic condensers." To quote the author's own words:

> "Every infection at the beginning causes particles to lose some of their negative electricity. In consequence of this, some of the particles send a portion of their adsorbed constituents into true solution and may pass themselves from the colloid state into the molecular dispersoid state. Other particles increase in size and agglutinate. These changes may be covered by the one word condensation. The condensation the protein particles in the plasma undergo becomes divisible into two types as the infection proceeds. The one type is characterized by conversion into solution—the lytic type. The other type is characterized by a withdrawal of the surface electricity to the centre and by a firmer binding of the sugar, salts, etc., which go to make up the complex protein molecule—the stable type."

On the basis of this hypothesis the author goes on to explain the *modus operandi* of the Wassermann reaction and many questions of immunity and specific treatment of disease.

The first chapter deals with the life-cycle of the micro-organism of leishmaniasis (*Leucocytozoon leishmania*): the object of this is to show the connecting link between the microbe of Vincent's angina, on the one hand with *Leucocytozoon leishmania*, and on the other hand with the *Leucocytozoon syphilidis*. The more distinctive feature of Mr. McDonagh's work comes to light in the second chapter, on the life-cycle of the micro-organism of syphilis (*Leucocytozoon syphilidis*). Those who have followed the author's publications will recollect that he has come to the conclusion that the *Spirochaeta pallida* is the adult male phase of a coccidial protozoon, and that the spore which results from the conjugation of the two sexual phases is the actual cause of syphilis. Mr. McDonagh gives an account of his views on this subject when discussing the life-cycle of the syphilis parasite. The spores develop like Leishman-Donovan bodies inside an endothelial cell. He considers that the female cells resulting from this development lead an extracellular life, while the male cells enter and develop in other endothelial cells. The adult male cell fertilizes the female cell as a spermatozoon does an ovum. The combined nuclei undergo division and subdivision to form a spore-cyst. Finally, the mature spore-cyst ruptures its "envelop" and frees the spores, which are the infective agents.

The theme of the book is unexpectedly interrupted by Chapter III, on the rationale of staining, which the author explains on an electrical basis. The fourth, fifth, and sixth chapters describe the part played by epithelial cells, leucocytes, and endothelial cells in the development of naevi, and reflect the views expressed by Mr. McDonagh in various contributions to dermatological magazines. These chapters are generously illustrated. We leave the fields of pathology, as commonly understood, for a dissertation in Chapter VII on the nature of conductors and condensers and their effect upon the general protection of the body. Since the understanding of Mr. McDonagh's views implies an acquaintance with the rudiments of physical chemistry, this chapter might have been better placed earlier in the book. Chapter VIII deals with the tests employed to measure dispersion and condensation of the protective substance, Chapter IX with the effect produced upon the blood of normal rabbits by the intravenous administration of special conductors and condensers, Chapter X on the effects upon the organs of rabbits of injecting special conductors and condensers. Space forbids us from commenting on these excursions into the realms of immunology.

The subject of the succeeding chapter, the effect of microbic invasion upon the host's general protective substance, is of more general interest to medical readers. Mr. McDonagh holds that all micro-organisms cause the protein particles in the plasma to undergo condensation: a difference exists in that Gram-positive bacteria occasion the lytic type and protozoa the stable type. Gram-negative bacteria, on the other hand, produce a type of condensation which comes midway between the two. "Continued condensation of the lytic type," he says, "leads to the formation of the stable type. Continued condensation of the stable type leads to the formation of lipoid-globulin. The latter is particularly characteristic of the cancer parasite." He finds little difference between the condensation brought about by micro-organisms and that by chemical condensers, and suggests that chemical substances reaching the maternal circulation from the chorionic villi may produce changes in the organs identical with those met with in coccogenic infections, also changes in the blood identical with those encountered in early syphilis. This is put forward to explain why a certain percentage of non-syphilitic pregnant women give a positive Wassermann reaction at some time or another during the parturient period.

Chapter XII discusses the relationship between intoxication and disease, the significance of minor maladies, and the pathology of the chronic stage of disease. In Chapter XIII, on chemotherapy, Mr. McDonagh rejects Ehrlich's theories on immunity, and discusses the question in his own language and from his own point of view. We pass to an essay on the coagulation of the blood, and from this to the rationale of the Wassermann reaction. The last two chapters are headed "Shock" and "The cerebro-spinal fluid."

It will be realized from this general account of its contents that a variety of different subjects come under review in this book, but the connecting thread of a general theme runs through all the chapters. This is the physico-chemical interpretation of pathology, a conception of the author's which gives a similarity to every subject he touches, however varied its origin. It would be foolish to speak slightingly of a book because it is heterodox, and it is not to this feature of the volume that we wish to point the critical finger. The greater number of Mr. McDonagh's readers will have their discriminating faculties wide enough awake without any circumspect warning from us. But it is our duty to say that it is often not at all easy to understand what the author means, to get a clear conception of his idea, even when he is speaking of relatively simple things. Many sentences must be read over several times before their substance is grasped, and even then there remains an element of doubt. For the rest, the book is well bound, clearly printed, handsomely illustrated, and efficiently indexed.

PSYCHO-ANALYSIS.

THE flow of small volumes of a semi-popular character dealing with psycho-analysis and elementary psychotherapy does not seem to diminish, and must be assumed to correspond to some public demand, though it is difficult to avoid the suspicion that the supply is excessive. The equipment of some of the authors, whether judged from the theoretical or practical standpoint, is not always complete enough to make them safe guides. The guidance needed by those, whether lay or medical, who have not previously studied the subject should be given by persons trained in psychology and psychiatry, and capable of forming an impartial judgement on the validity of the very wide claims made on behalf of psycho-analysis and the dangers by which the method may in some circumstances be attended.

Evidence of the sort of danger we have in mind may be found in a passage we shall quote from a book, *Psycho-analysis and Everyman*,[1] by Mr. D. N. BARBOUR, whose object, he says, is to present to the educated public the most important features of Freud's teaching. Psycho-analysis, he considers, is much more than a therapeutic method; it affects by implication our whole conception of life, our ideas of right and wrong, our morals, our religion, and the education of our children. Whatever may be the value of this new teaching, both the medical man and the educated layman will alike be critical of psycho-analytical procedures described by the author. Thus, in regard to the process of transference, he writes: "Meanwhile, as may be supposed, the personal relations of the analyst and patient have been, to say the least of it, peculiar. If the analyst is a young man and the patient a girl, all the signs of

[1] *Psycho-analysis and Everyman*. By D. N. Barbour. London: George Allen and Unwin, Ltd. 1923. (Cr. 8vo, pp. 191. 6s. net.)

violent love may be manifested—from an idealized Platonic affection to a downright pleading for physical intercourse, alternating with an unreasonable and violent hate." Any form of treatment which aims to create a situation such as is described is obviously fraught with danger; it would also seem to be indefensible from the ethical standpoint. But then, as the author points out, psycho-analysis affects our ideas of right and wrong.

Mr. R. C. Waters, who is an ardent disciple of M. Emile Coué, has written a small book on *Auto-Suggestion for Mothers*.[5] He describes in detail the two methods of applying the Coué teaching to the treatment of children. The first, which is known as suggestion during sleep, is that recommended for children from 5 to 7 years and upwards. The second is called the direct method of caressing, and is that employed by Mlle Kaufmant in her clinic for children of all ages. At the conclusion of the book the author suggests that it should be theoretically possible to determine the sex of a child by auto-suggestion practised by the prospective parents before and after conception. He admits that because auto-suggestion for sex determination and conception may be possible in theory it does not necessarily mean that it will ever work in practice, and we must confess to feeling that the whole notion is somewhat fantastic.

Dr. Charles F. Harford has written a book on *Mind as a Force*,[6] in which he aims to put forward a view of mental activity which may serve as a basis for study and as a means of testing and explaining the methods which are adopted by different workers. The book contains twenty-eight short chapters dealing with various aspects of psychology; it is simple in style and definitely elementary in scope. The author acknowledges the influence of M. Coué's teaching, and emphasizes the value of auto-suggestion throughout his book.

In a small volume, entitled *The Dream on the Anxiety Hypothesis*,[7] Miss Julia Turner, president of the Psychological Aid Society, develops a mystical theory of dreams. She holds the view that the dream is the expression of a conflict between "the beautiful and the ugly"; that it recalls us to the fact that the Life-Principle, God, is within the "self"; that it purges the thoughts and illumines the outlook; and that it recognizes the God-principle in human nature. Miss Turner's views are evidently personal ones, and she would appear to find in dreams evidence in support of the theological doctrine of Divine immanence.

FRACTURES AND DISLOCATIONS.

The appearance of a second edition of *Dislocations and Joint-Fractures*,[8] by Dr. F. J. Cotton, surgeon to the Boston City Hospital, is welcome, as it shows that this excellent work of reference has been appreciated. Despite the occurrence of hostilities since the first edition was published, Dr. Cotton has not made any important alterations, and beyond the addition of one chapter and a number of illustrations the book remains much as before. The chapter on "Generalities" has been enlarged and is now illustrated, as it was not in 1910. Most of the new figures are from radiograms of injuries, but a large number of small diagrams of injuries of the hip and its neighbourhood are from drawings by the author. In our review of the first edition we remarked on the scanty illustration of splints needed in treating joint-fractures. The chapter on the technique of splints and plaster in the new edition to some extent remedies the defect, but this branch of the subject is still treated in a rather meagre manner. His military experiences have not convinced the author of the value of Thomas's splints except as a means of facilitating transport. There can be few types of injuries about the joints which have not come under Dr. Cotton's notice and been recorded in this work.

[5] *Auto-Suggestion for Mothers.* By R. C. Waters. London: George Allen and Unwin, Ltd. 1924. (Cr. 8vo, pp. 94. 3s. 5d. net.)

[6] *Mind as a Force.* By Charles F. Harford, M.A., M.D. London: George Allen and Unwin, Ltd. 1924. (Cr. 8vo, pp. 128. 3s. 6d. net.)

[7] *The Dream on the Anxiety Hypothesis.* By Julia Turner, B.A.Lond. London: Kegan Paul, Trench, Trübner and Co., Ltd. 1923. (Cr. 8vo, pp. 77. 2s. net.)

[8] *Dislocations and Joint-Fractures.* By Frederick J. Cotton, A.M., M.D., F.A.C.S. Second edition, reset. Philadelphia and London: W. B. Saunders Company. 1924. (Med 8vo, pp. 745; 1,393 figures. 50s. net.)

CANINE AND FELINE SURGERY.

Veterinary surgeons are compelled, by economic factors as well as by questions of control and after-treatment, to place a severe restraint on their surgical enthusiasm in dealing with the larger animals under their care. In the case of the dog and cat, however, where financial considerations are less important, and the animals are more easily controlled before, during, and after treatment, how much can really be done to these animals is shown in the third edition of Mr. F. T. G. Hobday's *Surgical Diseases of the Dog and Cat*.[9] Even to those who have some acquaintance with the skill shown by canine and feline surgeons, the rapid advance of this branch of surgery will come as a surprise. Modern developments in antiseptic technique and in the use of anaesthetics have resulted in an astonishing degree of efficiency, especially when it is remembered that the patient is not only incapable of helping itself, but is apt to do its hardest to undo the visible results of the operation.

After a general introduction on the preparation and restraint of the patient, the use and abuse of anaesthetics is carefully considered. It is of interest to note that the author favours chloroform for the average adult dog, and either ether or A.C.E. mixture for cats and small or young dogs.

The remainder of the book consists of a classified description of the various operations on these animals, the details of the methods employed for each, and discussions of typical cases. Many of the operations described are of extreme interest. For example, the use of glass eyes, false teeth, and artificial limbs are somewhat unexpected adjuvants in canine practice, but all have been used with success. The operations are related in considerable detail, and minute instructions are given for the treatment of the patient before and after, and various points are illustrated by reports of actual cases which have come under the author's care. There is a chapter on the surgical aspects of dystocia, and another on the use of x rays in veterinary practice.

The illustrations are plentiful and appropriate, and the printing, quality of paper, and binding reflect credit on the publishers. The volume is sufficiently detailed to be of use to the final-year student, but it is not too didactic to be valuable to all who have in their care the surgical handling of dogs and cats. Mr. Hobday is to be congratulated on the appearance of the new edition of a textbook which has been out of print for many years. It will serve still further to enhance the reputation previous editions won for the author.

NOTES ON BOOKS.

Under the title of *A Pioneer of Public Health*,[10] Professors E. O. Jordan, G. C. Whipple, and C. E. A. Winslow have written a series of essays to commemorate the late Professor William Thompson Sedgwick, who died in 1921 at the age of 66 after a career of almost forty-five years devoted to public health, although he never took a medical degree. The book, which contains an introduction by his widow and several excellent portraits, deals with the public health movement in the seventies, and gives an account of Sedgwick's work in the department of biology and public health at the Massachusetts Institute of Technology and his other multifarious activities. The writers state that his investigations of a series of typhoid epidemics in 1894 constituted his most important contribution to knowledge in the field of public health and gained him the title of the Father of Epidemiology in the United States. His next most notable achievement was the development of laboratory methods for the study of the microbiology of air, water, ice, and milk. He also devoted much attention to the subject of food sanitation and conservation, and emphasized the importance of statistics in epidemiology and of sanitary engineering, chemistry, and biology in the prevention of the chief communicable diseases. Sedgwick was well known to public health workers in this country, where he acted in 1920 as exchange professor at the Universities of Cambridge and Leeds. A bibliography of Sedgwick's publications and a list of his pupils are appended.

[9] *Surgical Diseases of the Dog and Cat.* By F. T. G. Hobday, C.M.G., F.R.C.V.S. Third enlarged and revised edition. London: Baillière, Tindall and Cox. 1924. (Demy 8vo, pp. xi + 435; 263 figures. 15s. net.)

[10] *A Pioneer of Public Health—William Thompson Sedgwick.* By E. O. Jordan, G. C. Whipple, C. E. A. Winslow. With an introduction by Mary K. Sedgwick. New Haven: Yale University Press; London: H. Milford, Oxford University Press. 1924. (Med. 8vo, pp. xvi + 193; 5 plates. 18s. 6d. net.)

Dr. PAUL LE GENDRE'S work on *Charles Bouchard*[11] is a valuable contribution to the history of the Paris Faculty of Medicine in the last quarter of the nineteenth century and first decade of the twentieth. Bouchard's medical activities were many and various. In addition to a large consulting practice he was physician in turn to the Bicêtre, Lariboisière, and Charité hospitals, in the laicization of which he took a prominent part. He devoted considerable attention to laboratory work, in which he had as his assistants Chantemesse, Netter, Widal, Roger, Charrin, Balthazard, and Claude. In 1876 he succeeded Lorain in the chair of the history of medicine, where he devoted a series of lectures to the prophylaxis of venereal disease in antiquity and modern times, and a few years later succeeded Emile Chauffard as professor of general pathology and therapeutics. His literary work covered a large field. To English readers Bouchard is probably best known by his work on auto-intoxication, a translation of which was published by Sir Thomas Oliver in 1906. He took an active part in congresses in France and abroad, notably in the tenth International Congress of Medicine held at Berlin in 1890 and in that held the following year in Rome. He was president of the Société de Biologie in 1906 and of the Académie des Sciences in 1908, the highest scientific distinction which can be bestowed on a medical man in France. Not only does Dr. Le Gendre give a fascinating account of a well filled life, but he also draws a vivid picture of many of Bouchard's contemporaries and most illustrious pupils. It is for this reason that the absence of an index—a defect so often to be deplored in French publications—is particularly regrettable, though it is to some extent made up for by a detailed table of contents.

In his little work on *Aromatics and the Soul*[12] Dr. DAN MCKENZIE deals with the olfactory sensation in a similar manner to that in which he discussed another special sense in his *City of Din* some years ago (JOURNAL, 1916, i, p. 417). His new book, which he wishes his readers to regard as a "light omelette of scientific literature," is divided into nine chapters, dealing successively with olfaction and public health, the sense of smell in the lower animals, smell and speech, smell in folklore, religion, and history, smell and the personality, and theories of olfaction. The final chapter, entitled "Dust of the Rose Petal," contains a description of various olfactory memories from the writer's life. Possibly because the book is intended as much for the layman as for the medical reader, the author seems inclined to minimize the association between the olfactory organs and the sexual apparatus. The work is enlivened by numerous allusions to *belles lettres*.

Dr. G. PISTOCCHI'S little book on the preparation and technique of serum reactions in the diagnosis of syphilis[13] contains a clear statement of the principles on which the reactions depend, the methods of preparation of the various reagents, the interpretation of results, and the indications of fallacies. Most of the pages are concerned with the Wassermann reaction, but a short account is given of the simpler flocculation tests of Sachs-Georgi and Meinicke, and of the turbidity tests of Dold and Meinicke. The author recognizes the fact that full details of these have already been published in other volumes, and his aim is merely to indicate in simple language how the various reagents are prepared and the principles and methods of their application to the serum under examination. His book is essentially practical, and intended to enable the physician to carry out Wassermann and other tests with the aid of commercially prepared amboceptor and antigen.

In the *Medical Art Calendar* for 1925, as in previous issues except that for last year, the pictures reproduced are all by Dutch artists, and the committee of selection (of which Mr. C. J. S. Thompson, curator of the Wellcome Historical Museum, is a member) has decided to maintain this limitation, at any rate for the present; this is wise, for the store of Dutch pictures dealing with medical subjects must be wellnigh inexhaustible. Intimate scenes showing the visit of the doctor abound; there is reproduced here one by F. van Mieris (1635–1681) showing a lady fainting gracefully in a chair attended by an old woman; the physician is spying at a glass, no doubt of urine, and in the background is a weeping child; it is a very delightful composition; the original, which does not seem to have been published before, is in the collection of Dr. C. Hofstede de Groot, an eminent art critic, who advises the committee. Two of the pictures show a piece of furniture with which we are unfamiliar, the "bakermat," a long low basket in which the mother sat in front of the fire to attend to her infant; it may appear again in a sketch by Rembrandt of his wife's lying-in chamber, but the drawing is not very distinct. There are several reproductions of pictures or sketches showing operations on the eye, mouth, or head, and five of dentists, one of them an extraordinarily clever travesty in which both operator and patient are monkeys; the monkey dentist has extracted a molar with forceps, but one at least of the human operators seems to be using a key. The committee claims, with good reason, that the old Dutch school of painters has proved of great value to the medical historian by depicting minutely the practice of the healing art in the sixteenth and seventeenth centuries. The calendar is well worth possessing and preserving. It is published by Mr. J. Philip Kruseman, The Hague, Holland, who will send it post free on receipt of 6s.

[11] *Un Médecin philosophe: Charles Bouchard, son œuvre et son temps (1837-1915).* Par Paul Le Gendre. Paris: Masson et Cie. 1924. (Roy. 8vo, pp. vii + 525; portrait. Fr. 30.)

[12] *Aromatics and the Soul: A Study of Smells.* By Dan McKenzie, M.D.Glasg. London: William Heinemann, Ltd. 1923. (Demy 8vo, pp. ix + 164. 7s. 6d. net.)

[13] *Preparazione e Technica delle Siero-reazioni per la Sifilide.* By Dott. G. Pistocchi. Bologna: L. Cappelli. 1924. (Cr. 8vo, pp. 79. L. 5.)

Correction.

The publishers of the small work on income tax by Ronald Staples, reviewed in our issue of November 15th (p. 908), were incorrectly given as Messrs. Baillière, Tindall and Cox. The book is published by E. J. Larby, Ltd., London.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

(*Continued from page 969.*)

THE eighth meeting of the Royal Commission on Lunacy and Mental Disorder was held at Whitehall Gardens on November 19th. Mr. H. P. MACMILLAN, K.C., presided.

Evidence of Medical Superintendents.

The first witness was Dr. HENRY DEVINE, medical superintendent of the Corporation Mental Hospital, Portsmouth. He said that in his opinion the Lunacy Act as an instrument of detention was almost perfect, and he had no reason to suppose that it did not fully protect a patient. Its defect from the psychiatrist's point of view lay in its too great insistence that every mental patient at all certifiable should be certified under it. In reply to a question as to his experience of the adequacy or otherwise of the medical certificate given before admission, he said that he had found only one case which could be described at the end of a week as not insane, and this was the case of a malingerer. He discharged the man, and within a week he was in another asylum, whose medical superintendent came to the same conclusion with regard to him. The certifying doctor in that case, of course, was not to be blamed. The witness was of opinion that, as the liberty of the subject was concerned, Poor Law cases as well as private should be certified by two doctors. In many cases the second certificate would be redundant, as it was in the case of the private patient very often, but two certificates would avert possible public criticism on the ground of discrimination against the pauper patient. He thought it desirable that when pauper patients passed through the Poor Law institution on their way to the public asylum they should be accommodated in a separate ward in the infirmary. Many of these patients were in the acute stage of confusional insanity, when very careful nursing was required. The reluctance of Poor Law authorities to proceed to certification—a reluctance partly due to consideration for the patient's interests—and the consequent prolonged period in the Poor Law infirmary might be disadvantageous to the prospects of ultimate recovery. He was in favour of such patients coming direct to the mental hospital and being lodged, without certification, in a detached part of it. It would be difficult to build a quite separate clinic for such cases, involving duplication of equipment and staff. The Chairman said that he thought some members of the Commission had been impressed already by the undesirability of this transitional stage through the Poor Law infirmary.

Dr. Devine then described the procedure followed on admission of patients. The ideal would be to have many small wards to accommodate the different classes, although, of course, the expense would be very great. The ward for recent cases was not at all the kind of place which figured in the popular imagination. Noise and excitement were not extreme, although the quietness was more pronounced on the male than on the female side. A maniacal case, of course, would be segregated. He did not approve of large barrack asylums at all; the proper asylum structure was a number of villas. In reply to questions he said that it would never do to put the acute patients among the chronic cases; the former were extremely sensitive to their environment, and they were, of course, the most hopeful cases. Nevertheless, the objection of other patients to a noisy neighbour was not so pronounced as might be expected; indeed, they were very often sympathetic.

The witness went on to urge that the asylum which served a particular town should be located in the town itself, and

should be recognized as the centre for the treatment of all mental illness in that community. He looked with some disfavour upon large county asylums isolated in the country. The fresh air and country occupations might be an advantage, but an even greater advantage was the maintenance of social relationships with the outside community possible in a town asylum. Many of his patients went out of the asylum into the town without any hindrance, and incidentally this procedure, together with the open doors on visiting days, helped to dispel any idea that patients had grievances which were hushed up. The more social contacts a mental case could have the better. The Chairman asked whether the larger institution possible to a county might not have the advantage in respect to laboratory and other equipment, to which the witness replied that he did not think every mental hospital should be expected to be a centre of research. The smaller institutions could have the benefit of the laboratories and research equipment of the more elaborate. He himself had a pathological laboratory at his asylum, but it was very little used, and all the blood tests and so forth were done at the local general hospital.

Asked whether certification was regarded as a slur upon a person's reputation, Dr. Devine said it was illogical that it should be, but it was. The person was subject to an unpleasant social censorship afterwards, and his children also. He had known the children of a mother who had had puerperal insanity brought up with the idea that they were abnormal. Many people became confirmed neurotics owing to the fact that a member of their family had been certified and society had taken up a certain attitude towards them. There were a large number of temporary psychoses, some of them quite severe, which could be adequately treated in a clinic with a minimum of formality. He thought the Scottish system of simple notification, without publicity or stigma, worked well. He was averse to having powers for control and detention in these cases, though he thought that if the patient objected to and resented treatment he should be certified fully. The Chairman asked whether in the course of treatment a certain restraint might not be necessary. Witness replied that it would be the same restraint as was used in an ordinary delirious fever. Only if the patient insisted on going out and refusing treatment should he be certified. If a voluntary boarder became hostile he would not like to have the case under his care without certification.

In the course of further examination, Dr. Devine said that he favoured the idea of dealing with mental cases in general hospitals, especially those hospitals to which a teaching school was attached. This would be a good thing for the profession, as at present the average medical student had some grotesque ideas on insanity. The Chairman pointed out that the long duration of mental illness made it necessary to provide for a long residence. The witness still thought that if this method could be employed many cases would not reach the asylum stage. The method had been successfully carried out at the Royal Infirmary in Edinburgh, where alcoholic psychoses, operation psychoses, and many forms of depression were treated in the general wards. He agreed that any institution associated with the detention of persons of unsound mind would be likely, in the long run, to have the same unpleasant associations in the public mind as asylums now had. But there was hope that the gradual enlightenment would largely mitigate this feeling. With regard to the possibility of admitting cases without certification, he said that of his own last 50 female admissions, 9 were willing cases, 33 indifferent or confused, and 8 unwilling, regarding themselves as the subjects of persecution. He wished to see the function of the relieving officer in regard to Poor Law cases done away with. On the recommendation of an insurance practitioner a poor person should be admitted to the public mental hospital. In the case of notification there might well be a kind of extended urgency order, thereby avoiding the formality associated with the attendance of a magistrate. These patients could be transferred to a nursing home, where they would be under the supervision of some authority. In a general hospital a separate block could be set aside for them, or in a small town one or two villas might be used.

The witness stated emphatically, in reply to other questions, that there was no tendency to keep patients in an institution after they had recovered their mental health. The idea that some patients who had made themselves useful to the institution were detained unnecessarily could be absolutely dismissed. In reply to Sir Humphry Rolleston, who asked whether he thought the Act should be modified in any way so as to protect the doctor from vexatious and unjustifiable actions, Dr. Devine thought that this might be effected, though he was not prepared to recommend a form of amendment. There was great reluctance on the part of doctors to certify, and in fact some would not certify.

Dr. H. Wolseley Lewis (medical superintendent, Kent Mental Hospital, Maidstone) advocated the setting up of voluntary clinics for early mental cases, the clinics to be near to the homes of the people, and to be free from any possibility of being regarded as vestibules to the asylum. Here cases should be encouraged to come as early as possible, and expert treatment should be available. It would be a deterrent to patients if they thought that the ultimate result of their visit to the clinic might be certification. At his own institution about 60 per cent. of the patients admitted during the last twenty years had been known to be ill for a month or more previous to admission, and it seemed to him a serious indictment of the present system that such cases were unable to get any expert treatment until they were bad enough to drive the general practitioner to certify them. A considerable number of cases probably might be prevented from getting worse if treatment in an out-patient department were provided. Many patients who were liable to recurrent attacks were fully aware that they were not well, and these would seek treatment earlier if they did not feel that such treatment was a preliminary to certification. As it was, they had no recourse save the attendance of the general practitioner. He would like the benefits which his institution could give to be available at the incipient stage, when they might be most useful. He would not desire these clinics to be directly associated with the public asylums, but it would be wise if the whole of the provision for the mental health of the community were under the control of one central authority. He would have it dissociated entirely from the Poor Law.

The Chairman pointed out that such a clinic would have to be either a separate institution altogether or an institution run alongside the mental or the general hospital. An independent institution would cost a large amount of money, and possibly might not have sufficient work to do to justify the expenditure. The witness said that what he had in mind was the gradual setting up of separate institutions, but they would not need to be large institutions—a country house on the outskirts of a large town might be all that was necessary for that particular town. A single voluntary clinic of, perhaps, twenty beds might serve for such a centre as Chatham, Rochester, and Gillingham, with a population of about 130,000. The Chairman asked whether, if all the hopeful cases were dealt with in a separate clinic, the atmosphere of a public asylum would not be depressed. The witness replied that he did not think so; the clinic would deal with purely voluntary cases, but there were large numbers of hopeful cases which would still go to asylums either because they were unwilling to go to the clinic or because they were unsuitable—for example, noisy—for mixing with clinic patients. He hoped that, as time went on, it would be possible for a large county asylum to take in a number of voluntary boarders. In reply to the Chairman, who remarked that the drawback to such clinics would be that the patient might at any time discharge himself from treatment, the witness said that in that event the patient would be no worse off than at present. Of course, the same power would be available to prevent a delirious patient, perhaps intent on suicide, from going out to do some mischief as already existed in the case of a general hospital in dealing with patients mentally unbalanced in consequence of physical illness. Whatever the disadvantages, he wished to keep the clinics free from any suspicion that powers of legal detention might be invoked.

Dr. Wolesley Lewis next went on to speak of the detention of certified patients in asylums. He thought that the onus of continued detention should not rest upon the medical superintendent, because it seriously militated against his success in treating the patient if the patient was aware that the doctor treating him was in fact the person detaining him. The relations of the medical superintendent with his patients would be very much better if the question of detention was made entirely one for an outside authority. It was his view that some judicial authority should attend the asylum at stated intervals to deal with the certified cases, and should call to his aid, if he pleased, independent medical testimony. He agreed that there would be many cases in which this apparatus of inquiry would take a merely formal character, owing to the hopelessness of the patient's condition, and he agreed also that the judicial authority would have to proceed largely upon the case records for which the medical superintendent or his staff was responsible. But he was visualizing a time when a large proportion of the chronic cases in asylums would be there in the character of voluntary boarders. At the present time, out of 1,800 patients in his own institution, 200 men and between 300 and 400 women were in open-door wards with nothing to prevent them from going away. A considerable number had parole. Many of these—chronic delusional cases—recognized that they were better off in the hospital than they would be outside.

The last witness of the day was Mr. H. F. Keene, chief officer of the London Mental Hospitals Department of the London County Council, who set out in detail the regulations and provisions under which the Council came into relation with lunacy administration, and also the duties of visiting committees.

British Medical Journal.

SATURDAY, NOVEMBER 29TH, 1924.

THE PREVENTION OF RHEUMATIC HEART DISEASE.

On two previous occasions (June 2nd and October 20th, 1923) we have taken the opportunity of directing attention to the subject of the prevention of heart disease, the consideration of which, we believe, has been too long delayed. The magnitude and importance of the problem have been overshadowed—partly, no doubt, by the consideration given to other scourges of the public health. The campaign against cancer has attracted public interest, because of the mystery surrounding the causation of this incurable malady, and with the hope that discovery of the cause would lead to efficient treatment. The ravages of tuberculosis, more particularly among the young adult population, have captured public imagination and sympathy. The dire effects of venereal disease are discussed on public platforms, and the educational effects are seen in demands for early treatment. Possibly because the primary damage has been done long before the cardiac cripple comes under direct observation, or at least before his condition is fully recognized, it has been accepted as fate that, the heart being the seat of disease, death is the inevitable outcome, and that nothing in the way of preventive measures is likely to be of any avail. Be that as it may, it has also been too often overlooked that organic heart disease now occupies the unenviable position at the head of the list of causes of death in this country.

The placing of rheumatic heart disease in a group as possibly preventable is long overdue, though by this we do not mean that it should be placed under the control of the public health authorities. In recent years there have been signs of an awakening conscience in this connexion. A lecture delivered by Dr. F. J. Poynton on the prevention of heart disease, published in the Journal on June 2nd, 1923, aroused not a little interest and correspondence. The Section of Medicine at the Annual Meeting of the British Medical Association, held at Portsmouth in the same year, addressed itself to the consideration of the etiology and treatment of heart disease in early life, and as a result a special subcommittee has been appointed by the Council of the Association to inquire into what has been and is being done in relation to the prevention, detection, and treatment of cardiac disease in childhood. This committee is at present making investigations, and its report should be of great value in concentrating attention on certain avenues of approach. The Medical Research Council is also engaged on inquiries in certain localities along more clearly specified lines. In the spring of this year the Ministry of Health published a report on the incidence of rheumatic diseases among the insured population,[1] and, while conditions are included which have no special bearing on the production of heart disease, the report contains much information which is germane to the present subject. Only last week we noted, in reviewing Sir George Newman's report on the health of the school child, that special inquiries are to be made into the incidence of disease among children under 5 years of age, the prevention of adenoids and enlarged tonsils, and the character, incidence, and prevention of rheumatism in children; all of these subjects have a direct bearing on rheumatic heart disease.

We welcome the further contributions to the subject made by Dr. F. J. Poynton in the Bradshaw Lecture, a full report of which is published in this issue (p. 986), and by Dr. Carey Coombs in his monograph on *Rheumatic Heart Disease*, to which we refer in our review column. It is now generally agreed that as far as the child is concerned the invasion of the body by acute rheumatism is, for all practical purposes, synonymous with invasion of the heart. Many persons now suffering from advanced rheumatic heart disease owe their present state, in part at least, to the erroneous idea that acute rheumatism is a joint affection. In the child the joints may escape entirely, and until it is appreciated that heart involvement is not a complication, but an essential (in some cases the only) manifestation of acute rheumatism in the young, so long will cases be neglected at the stage which gives most hope for beneficial results from treatment. Much may be done to mitigate the effects of cardiac rheumatism by efficient care during primary attacks, and by prolonged after-care under suitable conditions during convalescence. For the poorer members of the community this implies the provision of convalescent or recovery hospitals within reach of the larger urban centres. Only a few systematic attempts have been made on these lines in this country, and some have been too recently instituted to be of value in argument. But at Baskerville, near Birmingham, and at Broadstairs, Thomson and Raven have obtained results which justify expansion in this direction in other parts of the country. Relapses are less frequent, the tendency to recrudescence more readily controlled, training is supervised, and at the same time education is not neglected.

Dr. Poynton, in the Bradshaw Lecture, focuses attention on the prevention of acute rheumatism as the ideal. It appears to be the only logical attitude. While some good may doubtless be done by attacking the morbid superstructure, more good is likely to accrue if attempts to undermine the foundation are successful. The prevention and control of the primary infection are the only true safeguards against ultimate crippling of the heart. As the lecturer says, there are still many gaps in our knowledge, but it should be the duty of correlated research to fill these as speedily as possible. It is not only a matter of defining clearly the relation of the causal organism to the disease, or the place that infection of the tonsils plays, but the broader aspects of the predisposing causes have to be considered, and some parts of the inquiry may take many years. More information is required regarding the relation of the disease with poverty, density of population, damp, airless and sunless dwellings, proximity to watercourses, nature of soil, climatic conditions, heredity, and, more especially in regard to chorea, with nerve strain.

For this, it is apparent, workers of many kinds will be required, and Dr. Poynton indicates how information may be obtained and guidance offered at various age periods. Much information must be in the records of the Board of Education with regard to local incidence of heart disease among the school population. Unfortunately rheumatism has not previously been a scheduled disease in the reports of the school medical officers. If we read Sir George Newman's report aright this is to be remedied, and "the character, incidence, and prevention of rheumatism" are going to be the subject of special inquiry.

[1] British Medical Journal, 1924, i, p. 395.

THE GROWTH OF POPULATION.

A little more than a century ago most people were discussing and a few had read Malthus's *Essay on the Principle of Population*. For many of the reasons which made the subject of such interest one hundred years ago, and for new reasons, the principle of population is again a burning question; it is fitting that the president of a society Malthus helped to found should choose the growth of population as the subject of his inaugural address. The value of Mr. Udny Yule's statistical work is recognized by all who are competent to judge. There have been a few statisticians as highly skilled in the mathematical technique of the subject; some as familiar with its data and their inherent vices or virtues; a very few with similar powers of lucid exposition; none, we believe, with the same combination of gifts and acquirements. The address he delivered before the Royal Statistical Society on November 18th is a good example of Mr. Yule's work, and will be studied with both pleasure and profit even by those who dissent from the conclusions he reaches.

Mr. Yule pokes some gentle fun at the horrors—which, as he says, curdle our blood more when printed "horrours"—which the Malthusian arithmetic conjured up. "At the conclusion of the first century," says Malthus in a particularly blood-curdling passage, "the population [of Great Britain] would be a hundred and seventy-six millions, and the means of subsistence only equal to the support of fifty-five millions, leaving a population of a hundred and twenty-one millions totally unprovided for." "On horrour's head horrours accumulate"; but as, on the way to this catastrophe, persons totally unprovided for have been able to breed—otherwise the sum is wrong—perhaps there is hope even for the hundred and twenty-one millions. Indeed, as Mr. Yule points out, what Malthus really proved was that in settled countries population does not increase in geometrical progression. How does it increase? Obviously at a diminishing rate, tending towards some limit. In geometrical language, the curve of population has an asymptote parallel to the axis of time. More than eighty years ago a Belgian mathematician, Verhulst, suggested a "law" of population growth which fulfils this condition. This law was independently discovered recently by Professor Raymond Pearl, who, with his colleague Professor L. J. Reed, has applied it to a very large number of populations and found it an effective instrument of graduation. Mr. Yule accepts this law, not as *the* law, but as an adequate description of the facts, and asks himself what determines its form. He concludes that the main factor is not a changing death rate but a changing birth rate. "Increasing density might have been expected to produce increased mortality, but in point of fact it has not done so; the progress of medicine has in its effects by far outweighed the growth of density. When the noble science of medicine has done its best, it is possible that we shall see increasing mortality accompanying increasing density, but that is not likely to be the case for a long time yet; nor is the increased mortality so produced likely to be anything but what we should now regard as a low mortality. . . . It is true that, as a population stabilizes towards the limit, the death rate tends to rise and may rise to a considerable extent; but this is an effect due to the stabilization itself, and produced solely by the increasing proportion of the aged to the total population."

Mr. Yule, in fact, sees in growth of population "a biologically self-regulating process; indeed a process of which the regulation is extraordinarily sensitive." The inferences from Mr. Yule's theory of population growth, or perhaps we ought to say the consequences which seem to us to follow from his theory, are so satisfactory that it is greatly to be hoped he is right. Upon some of those whose duty it is to read articles and letters on the subject of "birth control" a conviction has steadily grown that the advocates of conception control and their opponents are for the most part tedious writers, only to be tolerated if the views they uphold or denounce with so much vehemence are really of first-rate importance. If, on the other hand, as seems to follow from Mr. Yule's hypothesis of biological self-regulation, they are mere vocal flies upon a wheel whose turning they can neither hasten nor retard, they may safely be left to talk to one another.

It is upon this point that Mr. Yule will be challenged, and we shall await with interest the discussion of the subject of population which, we are informed, is to be held at the next meeting of the Royal Statistical Society. Has the birth rate in different countries changed discontinuously in the last generation? If it has, what is the reason? Supposing that anticonceptual methods are a mere means, a mere instrument, of the biologically self-regulating process, is the case of Frankenstein at all in point? These are questions which must be answered, and, *pendente lite*, expressions of joy over the promised extinction of the birth control controversy must be reserved. Of one thing we may be sure: no opponent of Mr. Yule is in the least likely to write so good a paper.

THE METHODS OF MEDICAL EDUCATION.

Impressed with the urgent need on the one hand, and the increasing difficulty on the other hand, of distributing in a convenient manner and form information about medical education, which is so often published only on special occasions, such as the inauguration or the expansion of existing facilities, the Division of Medical Education of the Rockefeller Foundation has stepped into the breach with a more excellent plan. This is the collection of descriptions of clinics, laboratories, and methods of medical teaching in different parts of the world, which will be published from time to time in the hope that they may be of use to those engaged in planning improvements in the teaching and in the arrangements of medical schools. To his brief introduction to the first series of *Methods and Problems of Medical Education*[1] Dr. Richard M. Pearce, the director of the Division of Medical Education of the Rockefeller Foundation, appends the generous and rather unusual statement that the articles are not copyrighted, and that permission to reprint or utilize them in other ways is unnecessary. The articles are profusely and most successfully illustrated by the 120 photographs and plans contained in this brochure of 151 pages. The twelve articles are contributed by the professors in charge, three being in German, one in French, and the remainder in English, and all but two, dated respectively October and December of last year, were received for publication as recently as this year, so that the information is thoroughly up to date. The first seven deal with anatomy in centres in widely distant parts of the world—namely, the University of Wisconsin (C. R. Bardeen), University College, London (G. Elliot Smith), Peking Union Medical College (Davidson Black), Brussels (A. Brachet), Würzburg (H. Braus), Basle

[1] *Methods and Problems of Medical Education* (First Series). Division of Medical Education, Rockefeller Foundation. New York. 1924.

(Ludwig), and Yale (H. B. Ferris). At the University of Wisconsin the dissecting rooms are designed for twelve students, and are open every day in the year from 7.30 a.m. till 10 p.m.; lectures are voluntary; students are encouraged to consult original articles on points specially attracting them, and are directed to study their own and others' bodies in order to acquire knowledge of the human body as a working mechanism and to cultivate the power of observation. At the Peking Union Medical College research into problems peculiar to the Far East or based largely on Oriental material is in active progress, and by the courtesy of the Chinese Geological Survey a unique and extensive collection of Aeneolithic human bones from Fengtien and Honan have become available for investigation. At Yale few lectures are given, and, owing to the excellent supply of bodies, two students only work on each cadaver, each dissecting half the body, and all are engaged on the same part at the same time. The report of Yale University Department of Pharmacology and Toxicology is the only one devoted to this subject, and the only report on an institute of pathological anatomy is that of the University of Graz, contributed by Professor H. Beitzke. The two reports dealing with obstetrics are from the Lying-in Hospital, Boston, Massachusetts, provided by Professor Franklin G. Newell of the Harvard Medical School, and from the Peking Union Medical College, contributed by Professor J. Preston Maxwell. To the Boston City Hospital there has recently been attached the Thorndike Memorial Laboratory, built at a cost of half a million dollars, with four floors, and designed purely for clinical research and not concerned with routine work; as it was opened in the autumn of 1923 no comprehensive statement with regard to the proposed lines of research can be made, but investigations into pernicious anaemia, nephritis, and some cardiac problems have already been undertaken. In conclusion, we believe that all interested in medical education will welcome this scheme of the Rockefeller Foundation, and feel most grateful for the promise of help that it holds out.

HARMSWORTH MEMORIAL RESEARCH FUND.

THE R. L. St. J. Harmsworth Memorial Research Fund has been recently founded, with an endowment of £25,000, to promote investigation into the problem of infective or ulcerative endocarditis. It is proposed to collect and co-ordinate knowledge of the disease, including clinical records and publications dealing with its pathology. Clinicians and laboratory workers throughout the world will be invited by public advertisement and private approach to contribute details of the close study of all cases that come under their observation. Special researches contemplated include the study of the reactions of the blood serum to the infecting agents and bacteria associated with the disease, and of experimental methods of treatment, both chemical and bacterio-therapeutic. The members of the scientific committee of the fund are Sir Thomas Lewis, Sir E. Cooper Perry, Sir Thomas Horder, Dr. Mervyn Gordon, and Dr. Seymour Price. This committee is empowered to make recommendations to the trustees for grants for individual workers in this country or abroad in connexion with clinical and laboratory research. It is hoped that the research fund will come to be considered an appropriate centre for the collection of information relative to infective endocarditis from all quarters. To the current issue of *Guy's Hospital Gazette* Sir Thomas Horder contributes a description of malignant endocarditis from the clinical standpoint, and makes some proposals for its investigation; Dr. Mervyn Gordon, in the same issue, deals with the problem from the pathological side; both articles constitute part of a report to the trustees of the research fund. Scientific workers and clinicians in a position to suggest or undertake lines of valuable research are invited to communicate with the secretary of the fund, Dr. P. Seymour Price, 41, Sloane Gardens, S.W.1.

POLLUTION OF THE ATMOSPHERE BY SMOKE.

IN the Section of Public Medicine and Industrial Diseases at the Annual Meeting of the British Medical Association in July last Dr. Peter Macdonald said that the only reason why smoke pollution of the atmosphere continues is because public opinion does not call for its prevention, and he suggested that the general practitioner might take a prominent place in creating public opinion. The medical officer of health for Salford, Dr. H. Osborne, in his annual report for 1923, has drawn attention to the high death rate from non-tuberculous respiratory diseases, and he brings forward evidence to show that this high mortality may be due to the impure atmosphere of Salford. This evidence includes the records of observations made at three stations in Salford itself and one in the open country in Marple, Cheshire, where the amount of atmospheric pollution is scientifically measured. It also includes a consideration of the relation between periods of fogs and deaths from respiratory disease. The highest mortality in Salford was during the prevalence of fogs. In the Chadwick public lecture delivered on November 19th, Professor Julius Cohen, F.R.S., pointed out that soot from factory chimneys is very different from that from domestic fireplaces where raw coal is burned. In a factory chimney, owing to the high temperature and strong draught, the volatile portions of the coal are mainly consumed, whilst the draught carries off mechanically fine mineral dust and grit mixed with carbon containing little tar. Domestic soot, on the other hand, may contain as much as a quarter of its weight of tar, and it is this tar which causes the soot to cling. Dr. Osborne has taken great pains to ascertain the relative pollution of the air by the factory furnace and the domestic fire. He found from information obtained from the Salford coal merchants that the factories consumed all the year round 5,877 tons of coal weekly, while the domestic coal consumption in about 50,000 houses was 7,000 tons a week in the summer and 11,000 tons in the winter. It would appear, therefore, as Dr. Osborne observes, that the domestic fire plays a considerably greater part in atmospheric pollution than does the factory fire. Professor Cohen's solution of the problem lies in cheaper gas, cheaper coke, and cheaper electricity, with an energetic local authority encouraging their sale while holding a firm hand on the offending boiler chimney. Dr. Osborne, on the other hand, is not enamoured of the gas fire nor of central heating. The sense of comfort, he says, which is attributable to the glowing fire is not merely a psychological effect but proceeds from a physiological basis. The open fire, he adds, is an ideal ventilator, for it ensures continual replacement of the air of a room owing to the large volume which is carried up the chimney by convection; he points out that Professor Leonard Hill has shown that it is the visible rays of the spectrum which penetrate the skin to the small blood vessels, warming the blood and increasing the amount of antitoxic substances therein. At the conference of the Smoke Abatement League recently held in Manchester a very profitable discussion took place on the production of smokeless fuels resulting from the low temperature carbonization of coal. Such carbonized fuel, which is not a coke, is said to light as easily as coal, to burn without smell, and to produce a cheerful fire. If this fuel can be produced economically so as to be available to the public at a price at least as low as that of raw coal, Dr. Osborne considers it is much to be preferred on the grounds of health to the use of the gas fire.

FACTS ABOUT SMALL-POX AND VACCINATION.

A new edition of the British Medical Association's *Facts about Small-pox and Vaccination*[1] is now published, after an interval of nineteen years since the previous issue. The new pamphlet, as re-edited by Dr. J. C. McVail, is on the same general lines as the old, but is much fuller. In a brief introduction attention is called to the change in the type of small-pox from severe to mild, and to the coincident diminution of systematic vaccination of infants, especially since the Act of 1907, with, on the other hand, increase of adult vaccination owing largely to the war. As regards "compulsion," Dr. McVail urges, as he has done in the past, that the duty of the medical profession is to instruct the public and Parliament in the value of vaccination, and to leave the question of the law to the Legislature. For the rest the pamphlet is devoted to a detailed statement of the case for vaccination. Following the line taken in an address given by him last year to a meeting of members of the House of Commons under the chairmanship of Mr. Neville Chamberlain, Dr. McVail advances, and supports much more fully than in that address, four propositions—namely, (1) small-pox is worth preventing; (2) small-pox can be prevented by vaccination; (3) small-pox cannot be prevented without vaccination; and (4) properly conducted vaccination is very safe. Incidentally, contentions of opponents of vaccination receive notice. In discussing the propositions numerous references are made to the sources of the facts on which the case is based, and the pamphlet closes with a bibliography of works and authorities bearing on the various aspects of the subject.

ST. DUNSTAN'S.

The ninth annual report of St. Dunstan's,[2] the organization on behalf of the empire's war-blinded men, shows a steady continuance in well-doing. Cases of delayed loss of sight still come in, and there were at the date of the issue of the report nearly eighty men undergoing training or awaiting vacancies. The training of blinded men in handicraft or other work for which a sightless man is competent demands much patience and skill; it is far harder than the corresponding effort for a blind child. In the latter there are no habits to be undone, no constant references or translations of thought from former methods. But where training can be adapted to new work closely akin to that formerly done there is a readier advance in skill. After-care of the trained men shows that the task of instruction is not complete with discharge from the training school. Great changes have come about in supply and demand since the abnormal conditions succeeding the war. Markets, both of material and labour, are settling down, and there is much greater keenness of competition to contend with everywhere. These facts make it essential for blind workers to be fully versed in the latest developments of their crafts or occupations, and therefrom arises the necessity for an occasional term of retuition at the headquarters. It is further noted that, however high the point of skill in manual work of a blind person on leaving school, there is, as time goes on, a tendency to fall off in skill. The workers themselves seem to recognize the handicap due to uncriticized repetition. To meet this need the St. Dunstan's system of after-care arranges for periodic visits by skilled instructors to the men at their own homes, and on occasions for "post-graduate" courses of instruction at the headquarters. The handicrafts taught are of the usual type: mat making, basket work, boot making and repairing, carpentry, and the like. In the mat-making department the men achieved a distinct success in the production of the huge coco-fibre mats exhibited in the Australian Pavilion at the British Empire Exhibition; one of these mats measured 69 ft. by 8 ft. 9 in.; all were hand-made, and the contract was secured in open competition. Many of the men have done well in poultry farming; no fewer than two hundred are doing this work, excluding the many who have small poultry outfits. St. Dunstan's maintains a special farm at King's Langley, where stock birds are reared for breeding, and where the men are able to buy or exchange birds with advantage. The success of this branch of work is manifold. A good livelihood is secured, under conditions which favour general physical health and happiness. Many have done well as masseurs, and the names of well trained and certificated men sometimes appear in our advertisement pages. At one of the final examinations for the certificate of the Chartered Society of Massage and Medical Gymnastics, a St. Dunstan's man passed second of 320 entrants, nearly all of whom could see.

[1] London: The British Medical Association, 429, Strand, W.C. (Pp. 35. Price 6d., post free 7d.)

[2] *A Debt of Empire.* The Training and Life-care of Men Blinded in War. 1924. St. Dunstan's Headquarters, Inner Circle, Regent's Park, N.W.1.

BEER AND BARLEY.

The current issue of the *Biochemical Journal* contains a paper by Dr. Herbert William Southgate on the dietetic value of barley, malt, and malted liquors as determined by their vitamin content. The results indicate that while barley and malt contain water-soluble vitamin B in considerable quantity and in equal amount, there is no evidence that barley or its derivatives contain either vitamin A or vitamin C to any appreciable extent. Beer also contains vitamin B, independently of its yeast content, but to a much less extent than the corresponding amount of barley used in its manufacture. Thus, using the usual basal rations employed in such test experiments, it was found that it required the addition to it of 1.7 grams of barley (about 30 per cent. of the total ration) to secure good growth and fertility in rats. The beer produced from double the amount of barley (17 c.cm.) failed, however, to ensure normal growth. The experiments lasted twenty-five days. It would have been interesting to know what would have happened to the animals had their consumption of 17 c.cm. of beer daily (a considerable amount for animals weighing 50 grams) been continued for much longer periods. The author's weight curves excite curiosity, but we would have wished, so to say, to have followed their tortuous path to its end, and to have slaked our thirst for knowledge by an examination of the effects of this volume of beer on the internal organs. However, the results of this investigation indicate that he who is wise will eschew beer and ingest instead an equivalent amount of *aqua pura* and of barley or whole meal if he desires to secure the best nutritive return for money expended. Approximately four ounces of barley is the equivalent of a pint of beer, and we now know that the nutritive value of this four ounces surpasses that of several pints of beer. But there are some who use beer with no such utilitarian promptings, and for them the results of this investigation will perhaps have little interest. They will use beer because they like it, and undeterred by the thought that they are consuming a product for their pleasure whose manufacture necessitates the thriftless expenditure of a vastly superior foodstuff.

THE FROSCH-DAHMEN BACILLUS OF FOOT-AND-MOUTH DISEASE.

At the meeting of the Berlin Microbiological Society on November 17th Professor H. A. Gins,[1] on behalf of the German commission appointed to investigate the validity of the Frosch-Dahmen bacillus and its relation to foot-and-mouth disease, made a statement on the findings of the commission. It found that both control and infected cultures gave identical results, and that inoculation experiments into animals were quite ineffective. In short, the commission was unable to obtain any positive results.

[1] *Berliner tier. Woch.*, November 21st, 1924, pp. 661-663.

As it has been unable to obtain any more virulent material the investigations of the commission have now been discontinued. In their reply Frosch and Dahmen added little that was new to the discussion. They pointed out that the negative results of the commission could not be accepted as annulling their own positive results, that their own control cultures always remained sterile and unaltered, and that they had had nine successful series of inoculations into animals, two having been made in the presence of the commission. As they were of the opinion that the situation could not be altered by mere discussion, they were placing their material, photographs, and full details of their technique at the disposal of the members of the commission and any other persons interested in the research. They themselves remained entirely unconvinced by the report of the commission. The high standing both of the members of the commission and of the investigators render "not proven" the only possible verdict for the present. We hope that the situation will in the near future be relieved by the work of the British committee which, under Sir William Leishman, is investigating the disease.

TREATMENT OF MENTAL DISEASE IN THE EIGHTEENTH CENTURY.

IN a recent study,[1] mainly based on hitherto unpublished documents, Dr. Paul Sérieux, the well known Paris alienist, maintains that Esquirol's statement, made in 1835, that the insane in the eighteenth century were regarded as incurable and never received any rational treatment, was not only erroneous but also served to lead subsequent writers astray. In point of fact, as Dr. Sérieux proceeds to show by quotations from Baglivi, Boerhaave, Dionis, Morgagni, Tissot, and other contemporary writers, numerous works in the eighteenth century were devoted to the treatment of the insane, the remedies proposed including methods still employed at the present day, such as baths, douches, purgatives, hypnotics, electrotherapy, etc. The necessity for the treatment of mental disease was also realized by administrators and other members of the educated lay public, as we learn from the reports made by D'Argenson, head of the Paris police, and Voltaire's *Dictionnaire Philosophique*. A great many places for the reception of the insane were in existence in France during the eighteenth century, and, although their exact number cannot be given, they were certainly more numerous than at present. In the majority, however, the number of inmates barely exceeded thirty, and in some were not more than ten. In a few establishments, such as those at Senlis, Saint-Lazare, Avignon, and the Hôtel-Dieu and Petites Maisons in Paris, their number ranged from forty to one hundred, while in a few places the insane population exceeded one hundred. The places for the reception of the insane in France during the eighteenth century are classified by Dr. Sérieux in the following categories—namely: (1) special hospitals for mental diseases; (2) general hospitals with special quarters for the insane; (3) workhouses with special departments, as at Soissons and Beaulieu; (4) religious establishments and houses of detention, such as those at Senlis, Saint-Lazare, and Mont St-Michel; (5) fortresses and State prisons, such as Vincennes and the Bastille. Philanthropy, Dr. Sérieux remarks, was never more highly honoured, or, indeed, more fashionable, than at the end of the eighteenth century. Between 1772 and 1785 numerous plans were made for the reconstruction and reorganization of the Hôtel-Dieu in Paris, including a department for the curable insane, and the Government appointed physicians of repute to report on the organization of asylums and the treatment of the insane in foreign countries.

[1] *Archives de Neurologie*, October, 1924.

THE JUNIOR RED CROSS.

THE junior branch of the Red Cross movement is said to have had its origin in the schools of Canada in 1916, and so popular has it proved that it now boasts a membership of over six million children scattered in thirty-six countries where a Junior Red Cross Society has been organized. The British Red Cross has established a junior section, which this year launched out among schools as a movement to promote health, to furnish help to sick and suffering children, and to establish "a chain of service linking the children of all lands." In his annual report for 1922 the chief medical officer of the Board of Education, Sir George Newman, said that "the proper way of teaching the subject [hygiene] to children is by the encouragement of healthy practices and habits," and this is one of the main objects of the Junior Red Cross. Schools are enrolling all over the country, and educational and medical authorities already testify to the value of the movement. Seven simple health laws have been devised, which members promise to observe; in some schools—as, for example, in Birmingham—classes elect "health officers," and courses of lectures are arranged on first aid, health, and home nursing, followed by examinations, with Red Cross "junior certificates" for successful candidates. In connexion with the latter scheme three manuals have been prepared, following the plan of the well known Red Cross manuals for senior students. No. 1 is on "First Aid," by C. Max Page; No. 2 on "Nursing," and No. 3 on "Health," both by Beatrice Agar. Mr. Max Page's book[1] contains a preface by Sir George Makins, and it forms a successful introduction to the subject of first aid for the school child of between 14 and 16 years of age. The theoretical aspect is treated as simply as possible to enable the student to have a sound understanding of the principles on which practical work is based. The manual is divided into two sections: the first gives the rudiments of anatomy and physiology, and the second describes the usual methods of dealing with emergencies. These manuals will be useful not only to Junior Red Cross members, but also as guides to those who have to instruct children in hygiene.

[1] British Red Cross Manuals. No. I, *Junior First-Aid Manual*. By C. Max Page, D.S.O., M.B., M.S., F.R.C.S. London and New York: Cassell and Co., Ltd. 1924. (Post 8vo, pp. xii+96; 52 figures. 1s. 6d. net.)

GENERAL MEDICAL COUNCIL.

ELECTION OF DIRECT REPRESENTATIVES.

ASSOCIATION'S CANDIDATES RETURNED.

THE result of the voting in the election of four direct representatives for England and Wales to be members of the General Medical Council was announced on November 25th as follows:

Dr. HENRY BRITTEN BRACKENBURY (Hornsey) ...	11,486
Dr. ROBERT ALFRED BOLAM (Newcastle-on-Tyne) ...	10,087
Sir THOMAS JENNER VERRALL (Leatherhead)... ...	9,620
Dr. JAMES ALEXANDER MACDONALD (Taunton) ...	9,143
Mr. Frederic Hibbert Westmacott (Manchester)...	3,310
Dr. Henry Jasper Cardale (London)...	2,953
Dr. Robert Fielding-Ould (London)...	2,833
Dr. Gordon Reginald Ward (Sevenoaks)	2,685
Dr. Harry François Devis (Bristol)...	2,580
Dr. Edward Andrew Gregg (London)	2,125
Dr. John Brown (Blackpool)	1,089

The first four—the candidates supported by the British Medical Association—will be direct representatives for five years from January 1st, 1925. On behalf of their fellow members of the Association we congratulate Dr. Brackenbury, Dr. Bolam, Sir Jenner Verrall, and Dr. Macdonald on their success.

The direct representatives for Scotland (Sir Norman Walker) and for Ireland (Dr. Leonard Kidd) have been re-elected unopposed, as recorded in our issue of November 15th.

Scotland.

Royal Faculty of Physicians and Surgeons.

At the annual dinner of the Royal Faculty of Physicians and Surgeons, Glasgow, which was held on November 21st in the Faculty Hall, there was an attendance of about eighty Fellows and guests. The chair was occupied by the President, Professor T. K. Monro. Sheriff Fyfe proposed "The Imperial Forces" and Colonel G. H. Edington suitably responded. The toast of "The Sister Corporations" was given by Dr. A. Freeland Fergus, and replies were made by the Presidents of the Royal Colleges of Physicians and Surgeons, Edinburgh (Professor G. Lovell Gulland and Professor Sir Harold J. Stiles). "The City of Glasgow" was proposed by Professor J. M. Munro Kerr and acknowledged by the Convener of the Public Health Committee of Glasgow Corporation, ex-Bailie W. B. Smith. Sir Leonard Rogers, F.R.S., submitted the toast of "The Glasgow Medical School" in laudatory terms, and to this a reply was made by Professor Archibald Young. In the course of the evening an enjoyable musical programme was rendered by the Kay Family Orchestra, and songs were contributed by Mr. Robert Watson. Dr. John F. Fergus added to the entertainment by humorous recitations. On the call of Professor Gulland the toast of "The Chairman" met with a hearty response.

Ministry of Pensions Hospital at Edinburgh.

For some time it has been under consideration whether the Poor Law building at Craigleith should continue to be retained as a hospital for the treatment of ex-service men under the Ministry of Pensions. An agreement has now been concluded between the Edinburgh Parish Council, to whom the hospital belongs, and the Ministry of Pensions that the hospital shall be leased to the latter for a further period of five years.

Edinburgh Royal Infirmary.

At the fortnightly meeting of the board of managers of the Edinburgh Royal Infirmary, held on November 17th, a special donation of £250 was announced from the London and North-Eastern Railway Company, in recognition of the treatment received at the infirmary by persons injured in the collision at Haymarket Station on July 28th. It was reported that the receipts during the past fortnight had amounted to £5,586, including industrial contributions and legacies. Besides this, the sums received under the League of Subscribers' scheme amounted to over £1,544. The return of patients showed that 1,511 patients had been treated in the wards during the past two weeks, and 1,910 new cases had appeared at the out-patient departments.

Proposed New Infirmary for Stirling.

At the annual general meeting of the subscribers to Stirling Royal Infirmary, held last week, it was pointed out that the institution had now passed the fiftieth year of its existence. The infirmary was built originally for 30 patients, and from time to time additions had been made so that its work and importance had increased until the buildings had now outgrown their present site. Twelve years ago an extension had been made which had increased the accommodation to 58 beds, and at the present time there was accommodation for over 70 patients. The accommodation for nurses was not satisfactory, and several of the nurses had to be boarded out; there was also invariably a long waiting list for admission to the wards. It had therefore been proposed either to extend the infirmary or to face the question of an entirely new building. A report by Mr. James Millar, architect, was considered for extending the present buildings by taking in a girls' industrial school and grounds, but the estimated cost of the scheme was from £40,000 to £45,000, and it was further estimated that this extension would only suffice for the needs of the district for fifteen or twenty years to come. On the other hand, an entirely new infirmary would cost from £65,000 to £70,000, apart from the cost of a site; after full consideration of the various proposals, the directors had recommended that this latter scheme should be adopted. The meeting of subscribers unanimously approved this proposal. It was reported that the endowment funds now amounted to £55,984, the sum added during the past year being £9,793.

Addition to Arbroath Infirmary.

At a special meeting of the directors of Arbroath Infirmary last week it was intimated by Mr. J. C. Dewar, convener of the Management Committee of the infirmary, that in response to an appeal recently made for a special children's ward, five well-wishers of the infirmary who desired to remain anonymous had come forward with a sum of £2,750 for the erection of such a ward. A committee was appointed to consider the question of a site, the building itself, and to prepare an estimate of the yearly cost for the management of such a ward.

Glasgow Medical Appointments.

The Glasgow University Court has appointed Dr. Geoffrey B. Fleming to the lectureship in medical diseases of infancy and childhood at the Royal Hospital for Sick Children, Yorkhill, Glasgow, rendered vacant by the promotion of Dr. Leonard Findlay to the chair of medical pediatrics. The managers of the Glasgow Royal Infirmary have appointed Mr. Milne McIntyre, M.B., Ch.B.Glasg., F.R.C.S.Edin., to be visiting surgeon.

Mobilization and Massage for Fractures.

At the congress of the Chartered Society of Massage and Medical Gymnastics held in Glasgow University last week, a lecture and two demonstrations on the treatment of fractures by mobilization and massage were given by Mr. James B. Mennell of St. Thomas's Hospital, London. Professor Peter Paterson of Glasgow Royal Infirmary occupied the chair at the lecture. The lecturer first pointed out that when a bone was broken it was not sufficient to consider the problem of treatment in terms of the bone only, but that, if recovery was to be rapid, the structures which had been injured at the same time also required attention. If nothing was done for these structures until the bone was healed, much valuable time was wasted, and, moreover, conditions inimical to the proper functioning of the limb were established, which thereafter required protracted treatment and led to prolonged incapacity and often also to prolonged suffering. He showed how these evils could be lessened, and how patients treated only by fixation of the limb owed much of their disability to the treatment and not to the accident. Mobilization treatment had not yet become more general because special training and technique were required in it. He, however, considered that it was safer to continue the stereotyped methods of fixation treatment rather than to place the treatment which he advocated in untrained hands. At the subsequent demonstrations Mr. Mennell explained that in the treatment he proposed the splints were retained, but they were reduced to a minimum and made as simple as possible.

Ireland.

Robert Campbell Memorial Oration.

The Robert Campbell Memorial Oration was delivered by Dr. Thomas Houston, Director of Clinical Laboratories of the Royal Victoria Hospital, Belfast, on November 20th, in the Medical Institute, Belfast, before a large audience, Dr. Singleton Darling of Lurgan, president of the Ulster Medical Society, in the chair. Dr. Houston explained that after the death, in 1920, of Robert Campbell, M.D., F.R.C.S., many of his friends thought that some memorial should be founded to place on permanent record the high esteem in which he was held. A sum of money was raised and placed in the hands of trustees, and the Robert Campbell Memorial Oration was founded, to be delivered every third year on some advance in medical science. Dr. Houston recalled the work of Mr. Robert Campbell, the great affection in which he was held by his numerous friends and patients, and the advances he made in surgery.

He then delivered his address on Addison's anaemia. Hearty votes of thanks were accorded to Dr. Houston, and to the Ulster Medical Society for its hospitality.

Commission of Inquiry into Poor Law Relief in the Irish Free State.

The terms of reference for the Commission which the Minister for Local Government and Public Health proposes to set up to inquire into the question of relief of the destitute sick and poor, including the insane poor, are now available. The aim is to devise permanent legislation for effective and economical relief, and to inquire into the laws and administration relating thereto, and particularly as regards the following matters:

1. The adequacy and suitability of schemes formulated under the Local Government (Temporary Provision) Act.

2. To advise whether the existing law and regulations as regards home assistance require alteration towards securing that due provision is made for the sick and destitute poor in their own homes, without avoidable wasteful expenditure on healthy persons who are incorrigibly idle.

3. To examine the law and administration affecting the relief of the following destitute classes: (*a*) widows and their children; (*b*) children without parents; (*c*) unmarried mothers and their children; (*d*) deserted children.

4. To inquire into the existing provision in public institutions for the care and treatment of mentally defective persons, especially as regards the care and training of mentally defective children.

Tuberculosis in Cork.

The annual medical report of the Cork County and City Sanatorium, submitted by Dr. Richard Aherne, resident medical superintendent, for the year ending March 31st, 1924, contains a valuable summary of the vital statistics concerning tuberculosis in the Free State, as well as in Cork city and county. The figures reveal a marked reduction in the mortality from this disease in recent years. To combat the ravages of the disease the report recommends the adoption of an improved antituberculosis scheme. The putting into force of compulsory notification, in addition to the establishment of tuberculosis dispensaries in city and county, is strongly advocated. Scant attention, the medical officer states, has hitherto been devoted to the detection and prevention of the disease, which, in the majority of cases, is acquired in childhood. Child welfare and the provision of a pure milk supply would constitute measures of supreme importance in the prevention of tuberculosis. Other suggestions in the same direction are housing improvements and town planning schemes, open-air schools for tuberculous children, medical inspection of school children, and a training colony for selected cases. The number of patients admitted to the Cork County and City Sanatorium during the year under review was 359.

Vital Statistics for Northern Ireland.

During the quarter ending September 30th, 7,264 births were registered in the twenty-seven superintendent registrars' districts in Northern Ireland, this number being equivalent to an annual birth rate of 22.6 per 1,000, as compared with the corresponding figure of 20.7 in the Irish Free State, 21.4 in Scotland, and 19.3 in England and Wales. The deaths registered during the quarter numbered 3,975, representing an annual rate of 12.4 per 1,000, as compared with 11.3 in the Irish Free State, 11.2 in Scotland, and 9.3 in England and Wales. The birth rate was 1.3 below the rate for the corresponding quarter in 1923, but equalled the average rate for the third quarter of the ten years 1914 to 1923. The death rate was 0.5 above the rate for the corresponding quarter in 1923, and 1.3 below the ten years' average rate. During the quarter 121 coroners' inquests were held, representing 1 in every 33 of the total deaths registered. Uncertified deaths (those occurring when there had been no medical attendant during the last illness but an inquest was not held) numbered 401, or 10.1 per cent. of the total deaths registered.

England and Wales.

Sir James Barr and the Liverpool Medical Institution.

A large number of members and ladies attended a special meeting of the Liverpool Medical Institution on November 19th to celebrate Sir James Barr's fiftieth year of membership. The President, Mr. R. C. Dun, proposed that the sincere congratulations of the members be tendered to Sir James Barr. Professor Richard Caton, a former president of the Institution, who reached his jubilee year of membership in 1919, gave an account of the many honours and degrees that had been bestowed upon Sir James Barr, and alluded to the valuable help that Lady Barr had given her husband throughout his career. Dr. Thomas H. Bickerton, consulting ophthalmic surgeon to the Royal Infirmary, and a past president of the Institution, described the indefatigable efforts of Sir James Barr in connexion with the secretarial work and reconstruction of the building of the Institution; as editor of the *Liverpool Medico-Chirurgical Journal* he had converted a deficit into a credit balance; he had held every important post in the Institution, and was a trustee. The success of the Annual Meeting of the British Medical Association in Liverpool in 1912, under the presidency of Sir James Barr, had illustrated again the high esteem in which he was held by the medical profession. Dr. T. R. Bradshaw, an ex-president, described the work performed by Sir James when secretary of the Lancashire and Cheshire Branch, and his pertinacity in dealing with important business details. Tributes were also paid by Dr. Henry Harvey, a "jubilee member" in 1922, Mr. F. C. Larkin, and many others. The resolution was carried unanimously with prolonged acclamation. Sir James Barr, in responding, paid a warm tribute of respect to the late Sir William Gairdner of Glasgow, whose house-physician he had been; he attributed much of his success to the influence and inspiration of that master of medicine. He alluded to his start in Liverpool as a house-surgeon in the Northern Hospital, and gave accounts of incidents connected with his work as prison surgeon to Kirkdale Gaol. He then referred to the splendid work of the British Red Cross in Liverpool, both in the past and in the present. He voiced the hope that preventive medicine, in contrast with curative medicine, would be practised with increasing zeal. He acknowledged the tribute to Lady Barr, and assured the audience that that occasion would ever be considered one of the most memorable events in his career.

Leeds Memorial to Mr. T. R. Jessop.

A bust of the late Mr. Thomas Richard Jessop, presented by his widow, Mrs. Jessop, was unveiled at the Leeds General Infirmary by her daughter, Lady Moynihan, on November 21st. The bust, which is the work of Mrs. Quirk (Phyllis M. Blundell), was accepted by Mr. T. L. Taylor, honorary treasurer and chairman of the weekly board of the Infirmary. Mr. Jessop, who died in 1903, was for many years a member of the surgical staff of the Leeds General Infirmary, and was appointed consulting surgeon in 1890. On the amalgamation of the Leeds Medical School with the Yorkshire College he was appointed the first professor of surgery. Mr. Jessop served for several years on the Council of the British Medical Association, was a member of the Council of the Royal College of Surgeons of England for eleven years, and was appointed senior vice-president and Bradshaw lecturer in 1901.

Medical Women's Federation at Plymouth.

The autumn meeting of the council of the Medical Women's Federation was held in the Plymouth Guildhall on October 31st and November 1st, with the president of the Federation, Miss Frances Ivens, M.S., in the chair. A resolution was sent to the Minister of Health expressing the opinion that the doctors to be appointed as assistant medical officers of health (school medical officer, infant welfare and pre-maternity medical officer, tuberculosis or venereal diseases medical officer) should have had at least three years' post-graduate experience—to include more especially work bearing upon the appointments for which application is made,

such as diseases in children, obstetrics and gynaecology, and the study of venereal diseases. The possibility of securing the appointment of a medical woman on the Board of Control was discussed, and a committee was appointed to prepare evidence regarding the need for a medical woman commissioner on the Board of Control, and to take steps to submit such evidence to the Royal Commission on Lunacy, now sitting, together with a list of suitable candidates. Reports from subcommittees, from representatives on committees of the British Medical Association, and from other organizations were considered. The recent regulation of the London County Council that all its women medical officers must resign their posts on marriage without possibility of reappointment was deplored. It was felt to be a severe blow dealt at the freedom of medical women to exercise their profession. The matter was referred to the Standing Committee for the Defence of Married Medical Women for consideration as to future action. An interesting discussion arose on an inquiry made several months ago as to: (1) what hospitals had medical women on their staff and in what capacity; (2) in which hospitals medical women were eligible for staff appointments; and (3) what hospitals had women on their board of management. In response to 581 circulars sent out 423 replies had been received, and Dr. Ida Fox had drawn up a summary of the information obtained, which it is proposed shall be published in the Federation's *News Letter*. On the night of their arrival the members of the council were entertained to dinner by the Plymouth Division of the British Medical Association. This act of good fellowship was greatly appreciated and a most enjoyable evening was spent. On the following day the members were entertained at a luncheon between the meetings by Dr. Rosa Bale, president of the South-Western Branch of the Federation.

Royal Dental Hospital.

The annual dinner of past and present students of the Royal Dental Hospital of London was held at the Trocadero Restaurant on November 22nd. Mr. Warwick James, who presided, proposed the health of the past and present students, reminding them that the hospital was founded in 1858 and the school in 1860, and that both institutions were closely associated with the history of dentistry in this country during the last sixty years. He thought it not too much to say that all the other dental schools, including their great and friendly rival, Guy's, took their rise, directly or indirectly, from the institution now in Leicester Square. He alluded to various recent improvements in the hospital and the school, and to the advantages which the present-day student enjoyed as compared with the student of his own time; but it had also to be said that if more was offered to the present student, more also was expected of him, and many more demands were made upon the dentist than in those early days of dental education when the mechanics of dentistry was regarded as the main concern. Mr. James also put forward his ideal of a post-graduate school in London, associated with all the general hospitals, where members of the various staffs could co-operate, and material could be collected from a wide field both for teaching and treatment. The toast was acknowledged by Mr. T. A. Coysh, one of the former students, Mr. M. Cohn, a present student and Sanders scholar, and the Dean (Mr. H. Stobie), who mentioned that the number of students at present in attendance at the hospital is 202. In response to the health of the visitors, proposed by Mr. N. Grellier, Sir John Bland-Sutton, P.R.C.S., now consulting surgeon to the Royal Dental Hospital, made one of his charming speeches. He recalled that in 1880, when he was beginning to teach anatomy, a fair proportion of the students at Middlesex Hospital were dental students, and in conversation with them he soon learned that the descriptions of the anatomy of the teeth in the anatomical text-books of that period were deficient. To remedy this disadvantage in his own case, he obtained permission to attend the lectures on dental anatomy given by Sir Charles Tomes at the Royal Dental Hospital; that was his introduction to odontology. The primary function of the hospital, of course, was to help persons suffering from the pain, discomfort, and dangers attending the eruption, decay, and shedding of teeth. Some brilliant minds connected with the hospital foresaw that the time must come when dental surgery would be regarded as a branch of general surgery, and rightly, because it stood on the same tripod of anatomy, physiology, and pathology. A feeling soon grew up, which had been intensified by the war, that the dental surgeon should not be content with looking after the teeth, but should take charge of malformations, septic infections, and injuries of the jaws, exactly as the orthopaedic surgeons, by peaceful penetration, were obtaining control of injuries of bone. The time was coming when general hospitals, especially those associated with teaching schools, would have to provide wards for the treatment of diseases of the teeth, and odontologists must be placed on the same footing as ophthalmologists, laryngologists, and orthopaedic surgeons. Although in the dead man the teeth were the most indestructible part, in the living they were the most easily destroyed by the action of pathogenic bacteria, just as the hardest bones of the skeleton were found during the war to be reduced to the consistency of over-ripe cheese in a few weeks as the result of infected gunshot wounds. There was much yet to learn about the development of bone, and the wise man still asked, with the ancient writer, how the bones did grow in the womb of her that was with child. In all humility he had to say that the forces underlying the development and shedding of teeth were not understood. But he was proud to see odontology in its present splendid position as a science and exercising such attraction for so many gifted minds.

Central Midwives Board.

The Central Midwives Board for England and Wales met on November 13th, with Sir Francis Champneys, Bt., in the chair. A Penal Board was held first, followed by the ordinary monthly meeting. The Board considered letters from the Ministry of Health with reference to the question of lengthening the period of midwifery training, and asking whether any further alterations (beyond the lately amended note at the back of the form for sending for medical help) were contemplated in the rules, the approval of the present rules being due to expire on December 31st next. It was agreed to reply that no further alterations were proposed. A letter was read from the British Medical Association, stating that the Association had again had under consideration the Board's reply on the question of the use of opium by midwives and that it maintained its objection to the practice complained of. Lastly, it was agreed that the report on the work of the Board for the year ending March 31st, 1924, be signed by the chairman and secretary and forwarded to the Ministry of Health.

Correspondence.

THE GANGRENOUS GALL BLADDER.

Sir,—The opinion expressed by Sir John Bland-Sutton at the conclusion of his Lloyd Roberts lecture (British Medical Journal, November 1st, p. 795) should not, it seems to me, pass without challenge. Some years ago at a meeting in Hanover Square he made exactly the same statement, and repeated this more or less at the Annual Meeting of the British Medical Association at Exeter. On both these occasions I submitted that such a view was not based on correct pathology and was inconsistent with clinical experience.

As knowledge has accumulated I am more than ever convinced that it is most unwise to lay down the rule that a gangrenous gall bladder should always be removed, and to base such an opinion on a comparison with the appendix. The infectivity of a gangrenous appendix is well known, the dangers of general peritonitis equally well established, and the necessity of early removal recognized by everyone. Has an inflamed gall bladder ever given rise to general peritonitis? The infectivity of the inflamed gall bladder is well known to be of a mild variety, the grumous contents in the quieter stage being sterile. Acute cholecystitis recovers as a rule quickly, and carries a minimum of risk, so that urgent operation is never called for. Sharp

as the onset may be—resembling in this acute appendicitis—there is an absence of the general septic absorption, pallor, rapid pulse, apathy, etc.; moreover, the condition settles down even in the most severe cases in four or five days. The subacute varieties such as those recorded by Neaunyn may last several weeks, and may be unattended with pain for two or three weeks, giving rise to pyrexia only, and presenting at times an interesting problem for solution. If removal of a gangrenous gall bladder be considered as essential as that of an appendix in the same condition, then, considering the difficulties sometimes encountered, I fear disaster will not infrequently follow. From a not inconsiderable experience I feel in a position to say without hesitation that *the most acutely inflamed gall bladder may be left without anxiety provided suitable drainage be employed.* Two examples will serve to illustrate the position.

Some years ago I was called to a lady who had suffered from acute symptoms for several days. The gall bladder was far advanced in a gangrenous process, was quite black, and tore on the slightest handling. After removal of the calculi a gauze-covered rubber drainage tube was inserted and the wound closed. It was impossible, as will be gathered, to suture the viscus to the abdominal wall. Recovery was complete, though slow. Such a drain—that is, a good-sized rubber tube surrounded by a covering of ribbon gauze—enables us to drain with safety across the peritoneal cavity. In a few hours the gauze is adherent to the peritoneum, is permeated with lymph, and affords a protection not provided by the uncovered tube.

The second example was a lady of about 40 who, not having had any previous attacks, was taken ill on a Tuesday with pain, vomiting, and sharp pyrexia. These symptoms continued throughout Wednesday and well into Thursday, and then abated to such an extent that she was out of immediate danger. When seen by me on Friday the urgent symptoms had subsided, and though the abdomen was still tender it was possible to palpate a large swelling reaching as low as the iliac spine. We concluded that the tumour was a gall bladder, and that operation might be postponed to the following day. On Friday night the patient slept well without any sedative, and was free from all distress. On Saturday morning the tumour could be freely handled, all symptoms had subsided, and she was asking for food. Saturday was comfortable, and the night passed without any sedative. On opening the abdomen on Sunday morning an enormous and acutely inflamed gall bladder, reaching below the iliac spine and attached to neighbouring parts by recent adhesions, was exposed. It was removed without difficulty and without being opened, the wall being unusually thick. A considerable part of the wall, especially the hepatic aspect, was green in colour from the severity of the inflammation—was, in fact, in a stage of gangrene. The specimen is in the museum of the Royal College of Surgeons, together with some thirty gall stones—some of considerable size. It is over eight inches in length, and still shows the green colour.

From the progress of the case I doubt not it will be agreed that this gall bladder would have recovered. The extreme condition found in the first case is not likely to be encountered in the present day.

I would beg to emphasize—

1. That, unlike inflammation of the appendix, that of gall bladder gives time, carries very little risk, and that operation may safely be delayed and often deferred.

2. That a gall bladder in the most advanced condition of gangrene may be left without anxiety provided suitable drainage be employed.—I am, etc.,

London, W.1, Nov. 19th. CHARTERS J. SYMONDS.

THE GENERAL PRACTITIONER AND THE MATERNITY SERVICE.

SIR,—I venture to suggest that the reason why the general practitioner remains so apparently oblivious of the storm that is raging round his head over the shortcomings of the maternity service in this country is because he feels his voice is of no account where the opinions of our obstetrical experts come in. He hears little good of himself at their hands—he gets no credit for what he may have done, and all the blame for everything that happens to the lying-in woman. Expressions such as "dirty doctors," "careless," and "ignorant," are so commonly used to his discredit, that, personally, I am much disgusted with what I read in some of the discussions and articles in the JOURNAL. With all our faults, can the lying-in woman do without us? What have our experts to offer to take our place?

Is it a fact that puerperal sepsis only happens in a woman who has been examined and interfered with by a general practitioner or a nurse? I will not believe it. The worst case of sepsis following a confinement I can think of in my practice occurred in a woman whose child was born before I saw her; the placenta and membranes had also come away intact. Other cases followed in incomplete abortions. I have been in active general practice some thirty-three years. Of these I spent two years in town and colliery practice, and the remainder in a sparsely populated rural area. I have, I think, personally attended some 1,400 women in confinement—I exclude all premature births and abortions. I have never seen a woman die of puerperal sepsis, and, excluding abortions, I have not seen more than half a dozen cases that I could honestly regard as sepsis. The only deaths following confinement I have seen were: one from ante-partum haemorrhage; one, in an anaemic frail woman who was dying when I reached her, from post-partum haemorrhage; and two deaths from pulmonary embolism. Except in the first case, I do not think any of our experts could have helped me at all.

I do not know that other country districts are in any way different from mine, nor have I reason to think my experience is otherwise than that of other practitioners similarly situated—miles from railway stations and still more miles from a hospital. It is almost unheard of, such a thing as a death during or after childbirth anywhere amongst my medical neighbours in their midwifery practice, so really I cannot understand this present-day outcry and alarm at the risks and dangers the poor women run by being left to the mercies of common doctors and nurses.

When I first began practice it was the custom in the country villages to allow a woman to lie for some days in the clothes and bedding she was confined in, and I well remember the foul stench of some of these cases. I remember, too, the uphill fight I had in those days with the "Sairey Gamps" against so horrible a practice. Many a time when I refused to leave the house till a woman had been washed and had put on clean clothes and bedding have I been told that I would "give the woman her death" if I did. I have been told "her blood, if she died, would be upon my head." Fortunately for me none of them died, nor, as I have said, have I ever seen a death from puerperal sepsis.

Notification is quite useless. The local medical officer of health on every side is only another general practitioner, and has no place in which to put a case of this disease; and what more can he do than a man who is not a medical officer of health?

I notice that all this talk about improvements in our maternity service has relation to London and big towns; I see no mention of the troubles and trials of country doctors, many of us thirty and forty miles from special expert help if we need it; and in the middle of a stormy winter's night out on the moors face to face with a bad midwifery case, where can we get help? We have to do what best we can—and it must sound extraordinarily strange to the hospital expert that we do manage all right in the end—and still we are held up to every form of abuse, if not as a public danger. I object to such destructive criticism of a system unless the critic has something better to offer. I have heard of nothing yet—nothing but ideals which are all very fine if they could be attained. Of what use is notification to the medical officer of health so far as the patient is concerned? He does nothing. We practitioners notify all kinds of things, and it is seldom we ever hear of the medical officer of health doing anything; he may never even visit the case or its surroundings. If we are to notify puerperal sepsis or any other thing, surely let the notification be to an official who is expert in that particular line and who can come and give us the advice and help we really need.

If the lying-in woman is so badly in need of specialist assistance why cannot there be an expert obstetrician made available in certain accessible centres whose advice we men in isolated districts (where there are no hospitals) can get either for help in ante-natal treatment, such as diagnosing

pelvic contractions, or during a difficult case in labour where serious trouble has arisen, or afterwards in case of sepsis? A service such as this would be of real practical help to us. We certainly do not want an official in the form of a Grand Inquisitor, who may know nothing more of the work than we do, but who is simply to inquire into our treatment and general obstetrical knowledge and make a report to a higher tribunal, to our possible degradation. No, Sir, what we want is real assistance, sound expert advice, and practical kindly help in our hour of need. Even amongst the experts there seems doubt as to what is and what is not puerperal sepsis. Who, then, is to decide?

I entirely agree with your concluding remarks in the excellent leader in the Journal of November 15th when you say, "The reasoned opinion of those who have hitherto borne the burden of the maternity service is the most essential element in bringing about wise amendment." The general practitioner knows quite as well what he needs as those experts do, but he has neither the time nor the opportunity to attend conferences and discussions, or even to enter into controversial correspondence; hence he does not appear much in the arena, and the other side has it all its own way.

I cannot conclude this letter without mentioning a case I can never forget. A lady on a visit to one of our large cities had the misfortune to have an abortion at about the third month. She was never seen by a general practitioner at all. She was attended in a home by experts and died of sepsis in their hands. Discussing the case with a colleague, he remarked, "If this had happened with you or with me it would have ruined us; as it is, it looks like a 'skit upon high art.'"—I am, etc.,

Felton, Northumberland, Nov. 18th. R. A. Welsh.

Sir,—This century-old controversy emerges to-day under a new aspect. The problem is this: Of all births one-fourth need help—skilled help. How best to provide that is now being discussed in a manner very akin to present-day tendencies. Professor Louise McIlroy, whose letter on obstetrics and public health authorities appeared in your issue of October 4th (p. 642), would eliminate the family doctor entirely, and would have a staff of skilled specialists to do his work. Have we not had enough of that already? There are school medical officers, tuberculosis officers, regional officers, and now there is to be the obstetrical officer. Another battalion added to the vast army of the inspectorate! State aid as against private enterprise again, just as we see it everywhere, threatening to be if not already in being. And this suggestion comes at a time when, with the development of ante-natal endeavour, from which we all hope so much, the prospect is arising of a much larger proportion of natural labours being experienced.

This is not the only novelty exhibited in Professor McIlroy's letter. She assumes that a medical practitioner cannot be found equal to the work for which he has been trained. To what purpose, then, are the activities of the General Medical Council, of extern examiners, and the whole body of statutes regulating medical education? Are they not to ensure that registered medical practitioners shall give satisfactory proofs of competence before being allowed to practise? And that, as a body, they are competent for the work it is only fair to assume. No doubt there are exceptions, and cases are seen in hospital to show this; but can one wonder at this when we know the state of teaching in obstetrics? It is common knowledge in the schools that all the work is reserved for pupil midwives, and that the medical student has to struggle hard to get anything like a bare modicum of what he should have in the way of experience. In view of that faulty system it is not surprising that the rising generation of medical men should be less familiar with obstetric work than perhaps are their seniors.

I have recently read a paper on country midwifery practice,[1] in which I showed that quite a low standard of mortality or morbidity was attainable even in rather difficult circumstances. I do not think, Sir, that the time has come for socialist invasion of this territory. To the patient herself it would be most unwelcome. Her family doctor is the one she would prefer, and it is up to him to show that he is fit for the duty when he undertakes it. That will not be difficult. It is an instinct of all specialists to magnify their specialty and to enlarge upon its difficulties. Operative midwifery is a much easier thing than many will allow, far easier than much of the surgery which we in the country, at any rate, have to do. On that one cannot enlarge here. But the solution of the problem lies here and not in State interference. Give the medical student more thorough training: impress upon him the fact that this is to be one of the most important and valuable of all his medical duties, and that upon him lies not only the comfort of his present patient, but the well-being of the next generation, and of a surety he will respond.—I am, etc.,

C. E. Douglas, M.D., F.R.C.S.E.

Cupar, Fife, Nov. 23rd.

[1] *Edin. Med. Journ.*, June, 1924.

Sir,—The discussion on obstetrics and local health authorities, which Dr. Louise McIlroy started in the Journal of October 4th (p. 642), is of the greatest importance and must be examined from various points of view.

May I preface my remarks with a statement the accuracy of which few will contest? The best type of family medical adviser of the last generation was almost invariably a skilled obstetrician. His reputation largely depended on his successful conduct of midwifery cases. As there were no trained midwives he attended a large number of confinements. This ensured great experience and dexterity begotten of constant practice. Parenthetically, he had previously been an unqualified pupil to a reputable general practitioner—a most valuable asset to him later.

The "panel doctor" now reigns in his stead. It is through this channel that the solution of the difficulty may be found. To attract the best amongst them to take up midwifery practice seriously the inadequate fees must be raised. May not the wealthy friendly societies be brought to see that they could not better use a proportion of their large surplus funds than in augmenting in special cases the existing maternity benefits? In a few years the insured married woman would be found on the panels of those specializing in midwifery. Midwives and the public would soon know on whom they might safely depend in matters connected with pregnancy and delivery.

At the risk of offending consulting gynaecologists, amongst whom I can number some of my best friends, I should like to say they know very little of the excellent midwifery conducted in outlying country places and many manufacturing centres. It may surprise them to know that some general practitioners have never sent a case to an institution, and have dealt with practically every complication with a mortality that compares favourably with the Rotunda statistics. I listened to a friend who is a well known gynaecologist talking to a colleague to whose address at a British Medical Association meeting we had been paying appreciative attention. The gist of his remarks was: "Before long all lying-in cases amongst the well-to-do classes would be delivered in nursing homes, every case being as carefully prepared as for an abdominal section. Those amongst the working classes beyond the skill of the qualified midwife should go into public institutions." I ventured to ask, Why include midwifery in the curriculum of the ordinary medical student?

I know they see the damage done by unskilled midwifery, which might have been prevented; but I would remind them they also see the inevitable proportion of damage due to exceptionally difficult and urgent forceps cases which fall, unhappily, to the lot of all of us. I would, above all, plead that no suggestion of further official supervision be mentioned; or I fear it will not be long before married women will have to approach humbly some tribunal of austere, learned matrons for permission to procreate the much desired offspring.—I am, etc.,

J. B. Garman, M.R.C.S., L.R.C.P.

Birmingham, Nov. 20th.

SIR,—In the recent correspondence in your columns on this subject I have not seen any mention of the importance of educating the lay public to look upon any surgical intervention during labour in the same light as a surgical operation.

Surgeons have rightly insisted, and the general public have realized, that a surgeon requires the assistance of at least an anaesthetist and a trained nurse during an operation; yet a general practitioner in the performance of any obstetric operation is expected to combine these roles with, or in some cases without, the assistance of a midwife, with the inevitable result—that technique, asepsis, and anaesthetic must suffer. Of necessity, cases must arise when it is impossible in the time available to obtain assistance, but with the improvement in ante-natal work and the early recognition of abnormal cases in labour these should be reduced to a minimum.

I cannot help feeling that the medical profession is largely responsible for this attitude of the public.—I am, etc.,

Crediton, Devon, Nov. 22nd. HAROLD F. L. HUGO, M.B.

SIR,—Every year that passes many columns of the medical journals are filled with what amounts to little less than argument between the general practitioner and the specialist upon the proper conduct of maternity cases. Such a state of affairs could scarcely exist did not the general practitioner, surely with some justification, regard this subject more than any other as his own specialty. Now, it is a postulate of argument as great as any of Euclid's, that two persons are viewing the same thing from different angles. If this be granted, the remedy is obvious: either the two sides must try to exchange angles; or, even better, they should take observations together at each other's angles and at various intermediate points.

Let us grant for the moment that "bad midwifery" does exist in general practice. Can we say that "meddlesome midwifery" does not also exist in specialist circles? Do we discredit those figures of the Johns Hopkins Maternity Clinic, where, in several hundred cases observed, the puerperal morbidity of half the cases, treated with strict hospital antisepsis, was *much* greater than in the other half, treated with a minimum of soap-and-water toilet? Is it true that the total infant mortality (not in any one clinic) of "twilight sleep" does not exceed the normal? Particularly would it be worth while investigating the infant mortality and the maternal morbidity of several hundred cases of occipito-posterior presentations in hospital clinics and in general practice.

Apart, however, from statistics, which, as Moynihan has said, "can prove anything, even the truth," there is one obvious remedy for these differing opinions—namely, each side must see and study the other side's work. A certain number of general practitioners do now, in their small amount of spare time, indulge in post-graduate study, but can it be said that the specialist has made any serious effort to study the conditions of general practice?

Referring to personal records—which have involved the conduct or superintendence of, or at least the responsibility for, about 2,000 cases—several outstanding points assert themselves. The first is the relative rarity of serious maternal morbidity. The second is the frequency of cases which, by textbook standards, would be relegated to the chapters on difficult or complicated labour. Very many of such cases would attain no such dignity in the eyes of the general practitioner, particularly with regard to persistent occipito-posterior and transverse presentations. Such cases are regarded with a feeling more akin to annoyance than anything else. Not that he underestimates their true import—his experience of many such cases is a sound corrective—but, realizing the overwhelming proportion of similar cases which have emerged successfully, his prognosis will not err on the gloomy side. Only a year ago practitioners throughout the country received with a shudder of horror the verdict of an obstetric specialist on the treatment of persistent occipito-posterior presentations: "If, in a case of persistent occipito-posterior presentation, rotation cannot be secured, and gentle traction with the forceps is unsuccessful, the child should be perforated and extracted." Shades of Herod! Is this really true? Is there a practitioner of experience throughout the length and breadth of England who cannot recall a dozen cases under this heading, the children whereof flourish exceedingly, and the mothers whereof have not yet required hysterectomy or even a Fothergill operation?

Our facts and figures may side-slip from the ways of absolute truth. Our impressions may have the elasticity of incurable optimism, but our aims are deadly honest. At a very vulgar fraction of a specialist fee we flog our brains for better results, and we implore "younger Harley Street" to come off its perch. "Come down among us, and see for yourselves that, great as is the gap between the surgery of war and that of civil life, far greater is the gulf that separates 'midwifery in the cottage' from the practice of the great maternity clinics."—I am, etc.,

D. A. MITCHELL, F.R.C.S.Edin.

Midsomer Norton, Somerset, Nov. 22nd.

SIR,—One of the speakers at the discussion of the Royal Society of Medicine on November 6th is reported to have stated that "the chief and almost sole cause [of puerperal fever] was bad midwifery practice." This view still seems to be somewhat prevalent, and it is this attitude—which seems to be commonest among medical officers of health—which is one of the chief causes of the whole difficulty of notification. Is this view, however, the correct one? I think not. In time it may come to be realized that a rise of temperature following labour is not necessarily, or indeed often, anyone's fault. This, curiously enough, seems to occur quite as often in the perfectly straightforward case when there is no interference and there are no internal examinations by anyone, and when also the conditions are excellent; whereas the difficult case with much interference will often run a normal course throughout after delivery. Also it does not seem to be produced by squalid surroundings; indeed, it is reported to be more common in the mansion than in the cottage.

Again, the antiseptic and aseptic era has not been shown to have had any beneficial effect on the death rate: rather the reverse. Surely the advent of antiseptic and aseptic principles—however incompletely applied—should have shown some slight benefit if the infection were usually introduced from without. In my opinion, in the majority of cases, especially the bad ones, the cause is endogenous, some condition of heightened susceptibility or some undiscovered local focus, and I think that research directed towards this end might bear fruit.

With regard to notification, definite benefit must result to the patient, or it must be necessary from the point of view of safeguarding others before it will be a success. Notifying cases with a temperature of 102° for a certain number of hours, or 100° as I see one speaker advocates, will never appeal to the general practitioner. I frequently see cases with a slight rise of temperature when everything in the genital tract is normal—such cases as "milk fever" coming on as the breasts become tense (not mentioned by a single speaker), or other febrile conditions—for example, common colds, influenza, etc.

I think the better way would be to use the term "puerperal fever" rather than "puerperal sepsis"—as it is certainly not in every case a sepsis comparable to wound sepsis—and not to attempt to define it further for notification purposes at present. The general practitioner must be trusted to notify when his patient's welfare or the safety of others calls for it.

The slightest suspicion of a slur on the practitioner who notifies must become a thing of the past; first, because it is unjust; and, secondly, because the fear of it may in certain cases cause a doctor to delay notification, which will also cause a delay in the provision of the special treatment which that notification should bring.—I am, etc.,

L. LEIGH HADLEY, *M.C.*,

Acock's Green, Birmingham, Nov. 17th. M.B., Ch.B., D.P.H.

SIR,—The present controversy on this subject need not be taken too seriously by the general practitioner. During the last thirty-five years we have seen so many varied fashions in midwifery advocated by experts that the present habit of blaming the practitioner may be regarded

as the latest fad. We have had ante-partum and post-partum douching with various antiseptics; advice to finish every first case with forceps; condemnation of forceps in nearly every case; and so on. We have been advised to conduct every confinement as if it were a major operation. Major operations in hospital never become septic; but of two Caesarean sections which were done for me in hospital, one returned home with a suppurating abdominal wound! The infection in this case was not introduced by the examining finger, for no examination was made by me for two months previously.

The only two things we know about puerperal fever are, first, that we—experts included—know nothing about it, and secondly, that whenever it occurs the practitioner will be blamed for it. First he was blamed for carrying the infection on his clothes or on his hands, and probably in some cases he was rightly blamed. But when cases occur sporadically he is still blamed, but in a different way: he now introduces the infection from one part of the patient to another. The idea that the patient might introduce it in the same way by scratching the vulva, or that it might have been introduced by coitus previously, or conveyed on an insanitary sanitary towel, is, of course, preposterous.

What about the cases, sometimes fatal, which we all have, when no examination has been made by midwife or doctor? When these have been explained it will be time to put the blame on the general practitioner.

I have attended about five thousand confinements with one fatal case of puerperal fever. In this case I found that the woman's attendant was desquamating from scarlet fever. I mentioned the case to an expert, and can still remember the shrug of his shoulders which meant, "A very nice excuse." Until the experts get rid of the obsession that the practitioner is the person responsible for the continued prevalence of puerperal fever they will not go far towards finding the true cause.—I am, etc.,

Birmingham, Nov. 23rd. ROBERT ANDERSON, M.D.

SIR,—In Professor McIlroy's letter she refers to the midwife as a highly trained specialist. May I suggest that some at least of this training is obtained at the expense of the medical student?

The C.M.B. regulation insisting on personal conduct of twenty cases is carried out scrupulously by hospital staffs, and it is common for candidates to have done thirty to forty cases before coming to examination.

In the case of medical students there is no such regulation binding on all medical schools and universities; the result is the prevailing idea, in hospitals where both students and nurses are trained, that the training of the student is secondary to that of the midwife.

I have ventured to draw attention to this point as I think the extent to which it operates is probably not realized by the seniors of the profession; among students it is much discussed and somewhat resented.—I am, etc.,

DOROTHY DOUGLAS, M.B., Ch.B.

Cupar, Fife, Nov. 23rd.

PUERPERAL SEPSIS.

SIR,—In the course of the correspondence upon puerperal sepsis I observe that Dr. Leonard Mackey (November 22nd, p. 974) suggests that a vaccine might be of some use. May I say that I have so used a vaccine for over two years?

The method of preparation and the dosage were described in this JOURNAL in 1922. The vaccine is a stock one, and the dosage differs fundamentally from that of the ordinary vaccine: as a result there is no risk of undesirable "reaction" effects on the patient.

The results have been as good as one has any right to expect. The vaccine is suitable for the gravest of cases. So far between forty and fifty cases have been treated, and as far as my information goes only one case has been unsuccessful. There may be others, but if so I have not heard of them.

I agree with Dr. Mackey on the importance of early recognition of the condition, and would add that, as in every other form of treatment, the sooner the vaccine is administered the more certain are the results.—I am, etc.,

C. E. JENKINS,

Manchester, Nov. 22nd. Pathologist to Salford Royal Hospital.

SIR,—Dr. Mackey expresses the opinion that in the vast majority of cases of puerperal sepsis we have to deal with a specific streptococcal infection. I beg to lend strong support to this view, since during the past twenty-four months as bacteriologist to the Birmingham and Midland Women's Hospital I have, in the course of examination of 120 swabs taken from the septic puerperal uterus, found a streptococcus with the same definite cultural characters in 63 instances. In a smaller number of cases of puerperal infection I have been able to isolate the same organism from the blood stream.

That I have found this streptococcus in a smaller percentage of cases than Dr. Mackey found may be explained very largely by the fact that in many instances the swabs in my series were taken in the wards by various resident officers, who at first failed to realize the importance of avoiding vaginal contamination in taking swabs from the uterus.

Dr. Mackey's description of the streptococcus appeared in Mr. J. Furneaux Jordan's Ingleby Lecture on puerperal sepsis, published in the BRITISH MEDICAL JOURNAL, July 6th, 1912, so I will only remark that it differs from the *S. faecalis* group in being haemolytic and in failing to ferment mannite, and from the *S. pyogenes* group in the appearance of its growth in broth, and especially in the large size and opacity of its colonies on agar. This appears to discredit two current views as to its causation: (1) that the uterus is infected from the rectum or faeces by common faecal streptococci, (2) that it is a dirt disease like wound infection in general.

It is true that the bacteriologist has as yet failed to construct a thoroughly satisfactory classification embracing all known varieties of streptococci, but I beg to claim, in virtue of the accumulating evidence, that a case has been made out for searching for a streptococcus of this particular type in pregnant women.—I am, etc.,

Birmingham, Nov. 24th. REGINALD G. ABRAHAMS.

SIR,—Dr. Gordon Ward writes that "of factors predisposing to it [that is, puerperal fever], nothing is certainly known except that there are such factors." In *Folia Gynaecologica*, vol. iv, Fasc. 1, p. 29, 1909, there is given a detailed report of an investigation by Dr. G. L. Basso into the bacteriological findings resulting from observation made on the vaginal bacteria present in 150 pregnant (not parturient) women in hospital. The number of cases in which streptococci were present in this investigation should receive full consideration before the doctor or midwife in attendance be blamed. If Dr. Mackey's suggestions could be carried out more would be done to reduce maternal mortality than any amount of municipal expenditure in providing consultants for cases of so-called puerperal fever, and far less expenditure would be needed.—I am, etc.,

Colwall, Malvern, Nov. 23rd. MARY WILLIAMS.

ENCEPHALITIS LETHARGICA.

SIR,—I note that Dr. Farquhar Buzzard, in his interesting paper published in your current issue (p. 937), speaks of the importance of detecting the early stages (otherwise called "ambulatory forms") of this disease. He has observed that conditions indistinguishable from influenza or even ordinary catarrh are sometimes followed by pronounced encephalitis. Does this, however, necessarily mean that they have been "early stages" of that affection?

May it not well be that any condition of an influenzal nature may eventually (in certain circumstances) *become* the serious condition which we call encephalitis lethargica, and that at the present day (owing largely, no doubt, to the general devitalization produced by the war) there is a greater tendency in that direction than there used to be? In other words, is not Dr. Farquhar Buzzard assuming too

readily that the apparently "influenzal" cases quoted by him, and which eventually became encephalitis, had been specifically encephalitis from the beginning?

If I am right in my surmise there has been some question-begging here, for might we not quite logically, on Dr. Buzzard's assumption, notify any case of influenza presenting nervous symptoms as "encephalitis in the early stage"?—I am, etc.,

Edinburgh, Nov. 22nd. A. J. BROCK.

TONSILLECTOMY.

SIR,—I fear that Mr. F. J. Steward's letter (November 8th, p. 876) can only serve to retard progress in the evolution of a sound surgical technique in tonsillectomy.

I have taken many opportunities to watch the work of some of the skilled protagonists of the various guillotine methods, and have given them a protracted trial before adopting the method of dissection, which I find superior to all others for its accuracy, its avoidance of trauma to surrounding parts, and its relative freedom from reactionary and secondary haemorrhage. Mr. Twistington Higgins rightly says that the necessary skill can be acquired fairly quickly, but the main difficulty which exists in the general adoption of this method is the dearth of sufficiently skilled anaesthetists.

I find it a very great help indeed for the anaesthetist to act also as the assistant, controlling the anaesthetic with one hand, while he packs the tonsillar fossa with the other. When we have a sufficient number of such trained anaesthetists the dissection method will, I believe, oust all others.—I am, etc.,

London, W.1, Nov. 22nd. CECIL A. JOLL.

MARRIED WOMEN IN PROFESSIONS.

SIR,—The London County Council has recently decreed that in future its women medical officers must resign their appointments on marriage. They will be ineligible for reappointment, and married medical women will not be eligible for service under the London County Council. The London County Council is not the first public authority to adopt this policy; it is part of a widespread movement which has existed for some years and which seeks to exclude married women in general from professional or other paid work.

Regulations such as that referred to above strike at the very foundations of the position women have won through the long struggle of recent years for emancipation and citizenship. The Bishop of Lichfield, preaching at St. Paul's at the jubilee of the London School of Medicine for Women, said: "The true meaning of the movement for the emancipation of women is a claim for liberty to exercise duties." As a corollary to this it also means that the community has the right to benefit by the use of these powers which under this new liberty women have acquired.

Municipal authorities are responsible to the ratepayers for the employment of their funds to the best advantage, and for obtaining the maximum efficiency from those whom they employ. It may be admitted that as a general rule marriage is likely to involve difficulties for a woman in her professional career such as do not affect a man; but this is not so in all cases, and there are also undoubtedly many instances where the special value of the individual outweighs the risk of temporary drawbacks. The policy advocated by the Medical Women's Federation has always been that municipal and other authorities should not make marriage *per se* a ground for dismissal, but should wait until there is evidence of diminution of efficiency, and that every case should be considered on its own merits. If resignation is demanded on marriage it should not exclude the possibility of reappointment. It is not to the true interests of the public that the hands of appointing bodies should be tied and their choice limited as they are by sweeping regulations of this kind. The authority adopting such measures entrenches itself, and its successors, in a stronghold whose walls effectually keep out of view possible married candidates among whom it is conceivable that some of exceptional calibre might be found. The mere fact that a woman wishes to continue to practise after marriage often indicates special devotion to her profession and love of her work. The degree to which marriage is likely to be a hindrance to a woman in professional or other work varies considerably with the nature and conditions of the work. It is unreasonable and unfair to put all married women, from doctors to charwomen, into the same category, and the fact that this has been done is evidence that other reasons have come into play besides considerations of efficiency. The regulations of the London County Council are contained in a Standing Order passed in 1906 which applies to all classes of married employees. Temporary exemption of certain classes of workers was permitted, but these exemptions have been successively withdrawn, that affecting medical officers being rescinded on October 21st of this year.

The support of the movement to keep married women out of employment seems to proceed largely from two quarters. First, from a large group of well meaning people who think that the activities of married women should be confined to their homes on the grounds that "a woman cannot have two professions," and who look with fear at anything that seems to threaten the old conception of marriage. Secondly, from those who seek to exclude married women from the labour market on the grounds that it is unfair that they should compete with single women and with men who have to support a family, especially in times of much unemployment.

With regard to the first group, it should be pointed out that whatever may be the opinion of individuals on the desirability of the non-employment of married women, their right to employment has been established by Parliament in the Sex Disqualification (Removal) Act of 1919, and restrictions which apply to all married women are clearly against both the spirit and letter of this Act. In connexion with the objection to married women's labour on economic grounds, the Medical Women's Federation, supported, I believe, by the medical profession in general, holds strongly that the private affairs of candidates should not be considered except in so far as they may affect the efficiency of their work. If the economic position of women is to be recognized as a factor in their fitness for appointments the principle ought in common fairness to be applied to both sexes, and men with rich wives or private means should be turned down equally.

If this movement against married women as workers is progressing it may well be asked: Does the public desire all professional women to be celibate? Must a girl who takes up a profession be faced with the prospect that she can only marry at the price of that profession and the loss to herself and the public of the time and money spent on her training? It has been well said, "What women really want is equal opportunities and to be left alone!"—I am, etc.,

F. MAY DICKINSON BERRY,
Honorary Secretary, Medical Women's Federation.

London, W., Nov. 23rd.

Obituary.

W. B. CRAWFORD TREASURE, M.D.,
Cardiff.

THE death of Dr. Crawford Treasure, which occurred at his residence on November 15th, removes a prominent physician and citizen from Cardiff and deprives the British Medical Association of a loyal and devoted worker.

Born sixty-five years ago in Somerset, William Beeson Crawford Treasure was educated at Crewkerne Grammar School and at Charing Cross Hospital Medical School, where he had a distinguished career, qualifying M.R.C.S. and L.R.C.P. in 1883. Later he obtained the degree of M.D.Durh. Before taking up practice he was house-physician and resident assistant medical officer at Charing Cross Hospital, and after that was resident clinical assistant at Leicester Royal Infirmary. He settled in practice in Cardiff about thirty-five years ago, and soon established himself as one of the most popular medical men in the city. He continued in practice until about nine months before his death, when failing health compelled him to retire. He filled various offices in Cardiff, including that of medical officer to the Post Office and medical referee of several

insurance companies. Although actively engaged in practice he still found time and energy to expend in numerous other directions. He was president of the Cardiff Medical Society, and until recent years took a great interest in this body; he was a justice of the peace for the city of Cardiff for almost twenty years. He was very appreciative of good music, and was at one time organist to St. Stephen's Church, where he was also a churchwarden. A keen sportsman, in his younger days he played cricket; but his principal game was bowls, at which he excelled, being formerly captain of the Cardiff Bowling Club. His association with Freemasonry extended over a number of years, and he reached high office, being a past master of the Prince Llewellyn Lodge, and also first principal of the St. John's Chapter. His political views were Liberal, but he was not actively associated with politics.

In many ways Dr. Crawford Treasure's public medical work was that by which he will be longest remembered. He was the first secretary of the Cardiff Panel Committee, and served in this office with distinction for several years. His work in connexion with the British Medical Association extended over most of his professional life. He was secretary and later chairman of the Cardiff Division, and president of the South Wales and Monmouthshire Branch. He was also a member of the Divisional Executive, the Branch Council, and the Contract Practice Committee of the Branch. For the last ten years he was a Divisional Representative, and was also a member of Council and of the Medico-Political Committee of the Association. He always gave of his best to the Association, and was a regular attendant at meetings, where his opinions—the result of his long experience in Association work—were often sought and were invariably helpful. His interest in Association work continued until the end, and he used to attend meetings when his physical condition rendered it almost unwise for him to do so.

Dr. GILBERT STRACHAN, honorary secretary of the Cardiff Division, writes:

He was a man of charming personality, who was always courteous and genial to his colleagues and who was welcome wherever he went. In particular to his juniors his attitude was one of friendliness and helpfulness, and the writer can recollect many occasions when advice was sought from Dr. Treasure on Association matters; it was freely given, and was always practical and helpful. Four years ago he underwent a serious surgical operation, and, although he made a successful recovery, it was evident since then that his powers had been undermined. His last illness was lingering, and the end was not unexpected to those who knew his condition. He leaves a widow, one son, and two daughters, to whom is extended the deep sympathy of a large circle of friends. His funeral on November 19th was attended by many members of the profession in Cardiff, also by a great number of personal friends and representatives of Freemasonry.

The Medical Secretary (Dr. ALFRED COX) writes:

In Crawford Treasure the Association has lost as devoted and loyal a member as it has ever possessed. He was a man of many and varied interests and accomplishments. In addition to his love of music he was a very accomplished linguist and a charming conversationalist. He was a sincere and devoted Churchman, and loved to entertain visiting clergymen and Church workers in his home, which he often did. But to see him at his best one had to be with him in the bosom of his family. Few men can have had a happier family life or inspired greater love in those immediately around him. I often had occasion to ask him to do services for the Association, and he never failed me. The writer of the obituary notice truly says that Crawford Treasure's work for the British Medical Association was often done latterly when he was unfit physically to do it. But his love of the Association work and his sense of duty towards it were very tenacious, as letters I received from Mrs. Treasure during the last few weeks of his life abundantly show. Everybody who knew our old friend, and particularly those who knew his family, will desire to join me in this brief token of affection.

SIDNEY JOHNSON TAYLOR, M.D.,
Norwich.

WE announce with regret the death, on November 14th, of Dr. Sidney Johnson Taylor, the well known Norwich ophthalmic surgeon. Dr. Taylor was educated at St. Thomas's Hospital and Edinburgh University, and obtained the diploma M.R.C.S. in 1878, graduating M.B., C.M.Edin. in 1882. In 1922 he proceeded M.D. He was the first to win the Musgrove scholarship at St. Thomas's Hospital, and he also obtained the Mead medal and the Treasurer's gold medal. At the University of Edinburgh final examinations he tied for the first place with first-class honours, and for the Ettles prize.

Mr. E. TREACHER COLLINS contributes the following appreciation:

By the death of Dr. S. Johnson Taylor many lose a warm, sincere friend, and the medical profession an experienced and skilful practitioner. He played for a long time a prominent part as ophthalmic surgeon, not only in Norwich and the surrounding district, but also in the various societies and congresses connected with ophthalmology, at the meetings of which he was a very regular attendant. At St. Thomas's Hospital he came under the influence of the earnest and forcible teaching of Dr. Charles Murchison, who was at that time physician to the hospital and lecturer on medicine. Taylor, admittedly something of a hero-worshipper, in later years manifested his admiration and devotion to his old master by having his son christened Charles Murchison. For a time Dr. Taylor engaged in general practice at St. Servan, near Dinard, in Brittany, but later decided to take up ophthalmology. At Edinburgh he had worked under Argyll Robertson, and he returned to London to work under Nettleship at St. Thomas's and Moorfields. In this latter hospital he served as clinical assistant at a time when Nettleship was at his prime as a teacher, and when all those who had to work for him had to do so most assiduously, both in note-taking and clinical investigation. In 1889 Taylor became a member of the Ophthalmological Society of the United Kingdom, having by that time started practice as an ophthalmologist in Norwich, where he remained actively engaged up to the time of his death.

The remarkable circumstance about Taylor's work in Norwich is that whilst he carried on a most extensive practice he never held a hospital appointment. Having, therefore, no beds to which he could transfer cases requiring operative treatment, he was led to perform many major operations on the eye in his consulting room or in the patient's own home, in circumstances which, in the case of one less skilful or who knew less well what he was about, would be considered decidedly risky.

Johnson Taylor's contributions to the literature of ophthalmology consist mostly of the record of interesting cases well worked out, and of remarks in discussions on papers read by others. He was a frequent speaker both at the meetings of the Ophthalmological Society and at the Oxford Ophthalmological Congress. The racy character of his remarks to some seemed rather out of place in the sedate proceedings of scientific societies, but they were usually very much to the point, containing much practical common sense, and often helped to lighten the solemnity of the meetings. All his life he retained a great affection for Moorfields Hospital. For years it was a common practice of his to spend a day in town by visiting the hospital in the morning, going to a cricket match at Lord's or some other form of entertainment in the afternoon, and attending a meeting of the Ophthalmological Society in the evening. His was a very familiar figure in the operating theatre, where by watching the procedures of his confreres he kept himself well up to date in ophthalmic technique, a matter in which he took the greatest interest. Taylor's admiration for Moorfields was manifested in a very material way, apart from his attendances at its clinics. At the time of its centenary appeal, when a dinner was held to raise funds, Johnson Taylor sent a most munificent contribution, and wrote a letter which so aptly expressed the warm feelings which so many hold for the institution, that Charles Wyndham, who was in the chair,

read it to the assembled company with great effect. The death of Johnson Taylor's son was his great grief in his later years, and to the memory of his old teacher, Charles Murchison, F.R.S., M.D., and of his late son Charles Murchison Johnson, he last year presented the hospital with the sum of £1,000 for the endowment of a bed.

Sir WILLIAM COLLINS writes: Mr. Sidney Johnson Taylor was for a time resident medical officer at the Severn Tunnel Hospital, but, deciding to take up ophthalmic surgery as his specialty, he became clinical assistant to the Royal London Ophthalmic Hospital at Moorfields. Later on, settling in Norwich, his knowledge and skill in dealing with diseases, defects, and injuries of the eye secured him a wide reputation in that department of surgery which he had made his choice. He became a member of the Ophthalmological Society of the United Kingdom in 1889, and for thirty years was a regular attendant at its meetings and the contributor of many valuable articles to its transactions. He was thorough in his diagnostic investigation, well read in the literature of his specialty, and a skilful operator. His genial and considerate nature not only inspired the confidence of his patients but secured their lasting friendship.

THE LATE DR. G. E. HASLIP.

DR. H. H. MILLS (Kensington) writes: I hope you will allow me space to express my sympathy with the Association in the death of Dr. Haslip. His efforts for peace in 1912 and 1913 are known to few, but I can say unreservedly that he almost succeeded in avoiding the disaster of January, 1913. Happily the days of ill will have gone, but it should be recorded that Haslip, as a generous-minded man, used every endeavour to avoid a split in the ranks of the profession, and he almost succeeded. The failure to find a *via media* was due to the recalcitrant few who would suffer no compromise. I know how deeply Lauriston Shaw was affected by the failure of Haslip's efforts. Haslip's genial presence and his kind, generous heart were always devoted to the advancement of the profession.

On October 24th Dr. GEORGE DE BOURBOULON WATSON passed away, very suddenly, in his sleep, at the age of 72. He was born at Macao in 1852, and was the third son of Dr. Thomas Boswall Watson of Macao, and later, Hong-Kong, China. He graduated M.B. and C.M. at Edinburgh University in 1884, and held the L.R.C.P. and S.Edin. and the L.R.F.P.S.Glasg. diplomas. While acting as assistant house-surgeon to the Northern Hospital, Liverpool, his health gave way, and he took the post of ship surgeon. Having quite regained his health he settled down to general practice in Finsbury Park, North London, where he remained for several years. He had long an inclination to go abroad, so in 1910 he relinquished his London practice and sailed for Canada. He proceeded to the Far West of the Dominion, and eventually decided on Edmonds, New Westminster, and there he had been in practice ever since. He held several appointments—medical officer of health for Burnaby, police surgeon, and school doctor—and was very highly esteemed by all with whom he came officially in contact. To his patients he was much endeared by his kind and genial manner, and by his careful attention, for he was always a most painstaking and conscientious doctor. He was a very keen musician, with a sweet and strong tenor voice. For many years he discharged the duties of choirmaster at St. Alban's Anglican Church. At a meeting of the Burnaby Municipal Council, when the clerk officially notified the council of the death of Dr. Watson, all present stood with bowed heads, as a mark of esteem. The Police Commission also passed a resolution of sympathy with the family. At the funeral service the church was quite full, many having to stand. The rector, the Rev. H. Underhill, referred to the sterling character of the late physician. Several beautiful wreaths were sent by friends and associations, among them the Burnaby Medical Association, the Fraser Valley Association, the church committee and choir, the High School, Westminster, and his brothers and sisters in England. Dr. Watson leaves a widow, two sons, and three daughters to mourn his loss. Both the sons volunteered early in the war, the elder in the army and the younger in the navy.

The death is announced of ROBERT JAMES LEE, M.D., at the age of 83. He was the son of Dr. Robert Lee, a well known gynaecologist of his day. He was a student of St. George's Hospital, and graduated M.D.Cambridge in 1869. He was physician to the Great Ormond Street Hospital for Sick Children; he gave attention also to gynaecology, and the subject of the Goulstonian lectures, which he delivered before the Royal College of Physicians in 1874, was puerperal fever. Dr. R. J. Lee retired many years ago, and was residing at West Drayton at the time of his death.

We regret to have to report the death, on November 11th, in his 79th year, of Dr. JAMES ANGUS CAMERON, a well known and highly esteemed medical man. Dr. Cameron studied medicine in Edinburgh University, taking his M.B. and C.M. in 1867, proceeding to the M.D. degree in 1876 and his B.Sc. in 1890. He started practice in Nairn. Some years afterwards he left Nairn, having acquired an extensive practice in Yorkshire. About thirty years ago he returned to the North, where he was elected the first M.O.H. for the combined counties of Banff, Moray, and Nairn. Owing to increasing duties and failing health he had to relinquish his public health work. He was long a member of the British Medical Association and acted as president of the Northern Counties of Scotland Branch. He was one of the oldest Freemasons in Nairn. He was a deputy lieutenant and a justice of the peace for the county of Nairn. He leaves a son, Colonel Cameron of the Cameron Highlanders.

Dr. RAMON GOMEZ FERRER, dean of the medical faculty of Valencia, and Dr. PAUL HALLOPEAU, a well known French surgeon attached to the Hôpital Trousseau, have recently died.

Professor VAN DUYSE of Ghent, whose death is reported, was general secretary of the Belgian Society of Ophthalmology, and was renowned for his work on embryology, pathological anatomy, and ophthalmology.

The Services.

DEATHS IN THE SERVICES.

Brigade Surgeon Griffith Griffith, Bengal Medical Service (ret.), died at Herdrefeinws, Chwilog, North Wales, on October 25th, aged 80. He was born on January 13th, 1844, the son of Mr. Griffith Griffith, landowner, of Edern, Pwllheli, and was educated at Liverpool and University College, London, taking the L.S.A. in 1865 and the M.R.C.S. in 1866. He entered the I.M.S. on March 31st, 1866, passing third into and first out of Netley, became brigade surgeon on July 6th, 1890, and retired on May 1st, 1893. He was for some time in civil employment in Bengal, but spent most of his service on military duty. He served in the Abyssinian war of 1867-68 (medal); in Afghanistan in 1878-80 (medal); and on the North-West Frontier of India in the Mahsud Waziri campaign of 1881. His remains were cremated at Chorlton-cum-Hardy, Manchester, and the ashes buried at Llandegwning, South Carnarvonshire.

Deputy Surgeon-General Charles Hamilton Harvey, Army Medical Staff (ret.), died suddenly at Broadwater Down, Tunbridge Wells, on November 4th, aged 88. He was born at Islington on September 23rd, 1836, and took the L.S.A. in 1861, the M.D. at St. Andrews in 1882, and the M.R.C.S. in 1867. He entered the army as assistant surgeon on March 1st, 1861, attained the rank of brigade surgeon on June 15th, 1885, being specially promoted for his services in the Sudan campaign, and retired with a step of honorary rank on February 24th, 1886. As a regimental medical officer he served in the 3rd Hussars. He served in the Afghan war of 1878-80, with the Bombay column, took part in the defence of Kandahar, was mentioned in dispatches in the *London Gazette* of December 3rd, 1880, and received the medal; in the Egyptian war of 1882, when he received the medal and the Khedive's bronze star; and in the Sudan campaign of 1884-85, when he was principal medical officer of the River column, was present at the action of Kirbekan, was mentioned in dispatches in the *London Gazette* of April 10th and August 25th, 1885, received two clasps to the Egyptian medal, and was specially promoted to brigade surgeon.

Medico-Legal.

BIRTH CONTROL LIBEL ACTION.

Stopes v. Sutherland.

The appeal of Halliday Gibson Sutherland, M.D., against the judgement of the Court of Appeal setting aside the judgement entered in his favour at the trial before the Lord Chief Justice of England and a special jury of a libel action brought by Mrs. Marie Carmichael Stopes, D.Sc., against Dr. Sutherland, was allowed by a majority in the House of Lords on November 21st.

The proceedings before the Lord Chief Justice were reported in the British Medical Journal of March 10th, 1923 (pp. 445-8), and the alleged libel contained in a book entitled *Birth Control: A Statement of Christian Doctrine against the Neo-Malthusians* (printed and published by Messrs. Harding and More, Ltd., also appellants) was set forth in the statement of claim as follows:

"Exposing the Poor to Experiment.

"Secondly, the ordinary decent instincts of the poor are against these practices [meaning the plaintiff's system of birth control], and indeed they have used them less than any other class. But, owing to their poverty, lack of learning, and helplessness, the poor are the natural victims of those [meaning the plaintiff] who seek to make experiments on their fellows. In the midst of a London slum a woman [meaning the plaintiff], who is a doctor of German Philosophy (Munich), has opened a Birth Control Clinic [meaning the said clinic] where working women are instructed in a method of contraception described by Professor McIlroy as 'the most harmful method of which I have had experience.' (*Proceedings of the Medico-Legal Society*, July 7, 1921.) . . . it is truly amazing that this monstrous campaign of birth control should be tolerated by the Home Secretary. Charles Bradlaugh was condemned to jail for a less serious crime."

The appellants pleaded justification and fair comment, and the jury's answers to the questions left them were:

1. Were the words complained of defamatory of the plaintiff?—Yes.
2. Were they true in substance and in fact?—Yes.
3. Were they fair comment?—No.
4. Damages, if any?—£100.

The Lord Chief Justice interpreted the jury's answer to Question 2 as a verdict for the defendants (appellants), but the Court of Appeal, by a majority, held that the jury's findings amounted to a verdict for the plaintiff (the respondent) for £100.

There was a cross-appeal, the respondent claiming that should the judgement in her favour not be upheld she was entitled to a new trial on the ground of misdirection.

Judgement of the House of Lords.

The Lord Chancellor (with whom Lord Finlay, Lord Shaw of Dunfermline, and Lord Carson agreed) in his judgement said that the House was not concerned with any question as to the desirability of the use of contraceptives, or as to the propriety of encouraging such use by the circulation of printed matter. The real questions to be determined were: (1) What was the meaning and effect of the verdict of the jury? (2) Whether there should be a new trial? The answers of the jury to the second and third questions put to them by the Lord Chief Justice appeared at first sight to be inconsistent with one another. The plea that the words complained of were true in substance and in fact meant not only that all those words were true, but, also, "any imputation which the words in their context may be taken to convey." From this it had been held to follow that if on such a plea a verdict was found in the defendant's favour there was no room for any discussion of the question of fair comment. "The plea of fair comment does not arise if the plea of justification is made good." The Lord Chancellor, however, agreed with the Court of Appeal in holding that there was difficulty in applying the ordinary rule to the verdict in the present case, for the Lord Chief Justice, in his summing up, did undoubtedly draw a marked distinction between fact and opinion, and therefore he (the Lord Chancellor) would deal with the verdict upon the assumption that the jury acted upon that principle. The charges of fact might be divided into three parts:

1. By the first two sentences, which must be read together, the defendants in effect stated that (according to the plaintiff's interpretation) the plaintiff was taking advantage of the ignorance of the poor to subject them to experiments. Dr. Sutherland told the jury he meant by this not that at the plaintiff's clinic surgical experiments were made upon poor persons, but that they were there subjected to a social experiment which was contrary to the laws of Nature. The jury found this charge, plainly a statement of fact, to be true.

2. By the third sentence the defendants alleged that at the plaintiff's clinic working-class women were instructed in a mode of contraception which had been described by Professor Louise McIlroy as the most harmful method of which she had had experience. The Lord Chief Justice had told the jury that to justify this allegation the defendants must prove not only that Professor McIlroy had used the words with reference to a method of contraception (the use of the check pessary) recommended by the plaintiff at the clinic, but also that the method referred to was, in fact, of a harmful and dangerous nature. This charge, also a statement of fact, was found to be true, and there was undoubtedly evidence upon which the jury could find that such methods might not improbably be the cause of injury to the persons by whom they were used. This was particularly the case with regard to an apparatus called the "gold pin," which was said by several of the witnesses to be calculated to produce abortion.

3. By the last two sentences the defendants, in effect, charged the plaintiff with carrying on her campaign by means of literature not less obscene than that for which Charles Bradlaugh was prosecuted, and of such a nature as to infringe the criminal law, which forbade such publications. This charge, the most serious of all, was also found by the jury to be true in substance and in fact. The passages in the plaintiff's books upon which the defendants had relied as supporting this charge had been read by their lordships, and appeared to him to be of such a nature as fully to justify the finding of the jury.

That all the above charges were treated at the trial as matters of fact to be considered under the plea of justification was clear from the circumstance that plaintiff's counsel handed to the Lord Chief Justice a note defining the statements of fact: "(*a*) experiment, (*b*) victims, (*c*) most harmful method, (*d*) crime, (*e*) more serious," and the Lord Chief Justice proceeded on these lines in his summing up.

Then, if all the above charges were true, as the jury had found—that the plaintiff took advantage of the helplessness of the poor to subject them to experimental processes of a harmful and dangerous character, and carried on her campaign by means of obscene publications which constituted a breach of the criminal law—what remained in the alleged libel to which the description of "unfair comment" could have been intended by the jury to apply? Lord Justice Scrutton, in the Court of Appeal, had pointed to two statements as being statements of opinion upon which a question of fair comment might arise—(1) "the decent instincts of the poor," and (2) "monstrous campaign," and to these he (the Lord Chancellor) added a third, that the offence of which Charles Bradlaugh was convicted was "less serious" than that of the plaintiff. Was there any evidence on which a reasonable jury could find, assuming, as they must, the charges enumerated were true in substance and in fact, that these expressions of opinion constituted unfair comment? This was plainly a question for the court which had to determine whether the document was capable in law of being a libel, and he did not think there was any such evidence. The statement that the ordinary instincts of the poor were against the practice of using contraceptives expressed the opinion of the writer, not as to the mode in which the plaintiff recommended the practice of birth control for adoption, but as to the practice itself; but, even assuming the statement contained a reflection upon the plaintiff, he was unable to understand how, having regard to the facts found to be true, the reflection could be said to be unfair. The word "monstrous" was undoubtedly a comment and, if unfair, might give cause for complaint; but if, as the jury had found, the campaign in question had been carried out by means of the circulation of obscene and criminal matter, and if the defendants were justified in so stating, then the addition of the epithet "monstrous" could add nothing to the libel. The same might be said as to the writer's opinion that the plaintiff's offence was "more serious" than Bradlaugh's. If the substantive charge that the campaign was obscene and criminal might justly be made, a description of the same campaign as "monstrous," or "serious," was not a new and separate charge, but a mere shadow of the substantive charge for which a separate justification was not required. Therefore there was no evidence whatever on which a rational verdict could be found to the effect that the comment was unfair, and the judgement of the Court of Appeal in favour of the plaintiff could not stand, and, further, there was no good ground for ordering a new trial on the ground of misdirection.

The Lord Chancellor therefore moved that the Lord Chief Justice's judgement should be restored with costs above and below.

Dissenting Judgement.

Lord Wrenbury, dissenting, made reference to the increasing attention which the public had been giving to the question of birth control in recent years. He expressed no opinion at all as to which were right and which were wrong, but so strong were the feelings on one side and on the other that hard language might perhaps scarcely create surprise, and whether the language overstepped the bounds and fell into the territory of libel was for a jury to decide. The subject-matter was not obscene; the method of dealing with the subject-matter might be obscene. Whether it was obscene or not was a matter of opinion, or, at any rate, the jury might hold it to be a matter of opinion. In any case, it was a matter for them to decide, and by their answer to the third question they had, he thought, answered the question in the negative. The jury, in this case, had the plaintiff's books before them, and they were in a position to judge whether they were written too little from a medical and too much from a sexual or emotional standpoint. In his judgement it was impossible to say that twelve reasonable jurors could not accept and, if they thought fit, act upon that evidence and find that the imputation conveyed by the language of the libel as to exposing to experiment the poor, who, owing to their poverty, lack of learning, and helplessness, were the natural victims of experiments, and as to a monstrous campaign amounting to a crime more serious than that for which Charles Bradlaugh was condemned to gaol, was not justifiable. Imputations of victimization of the helpless poor, and of criminality deserving imprisonment, were not matters to be lightly regarded. They might well cut deep, and the more so in the case of a lady who was giving her time and her money to afford, as she thought (and, as her opponents admitted, bona fide thought), assistance to her poorer sisters. In his opinion the majority of the Court of Appeal were right in upholding the verdict in the third answer and giving judgement for the plaintiff in accordance with the finding of the jury upon the third question left to them. If he (Lord Wrenbury) was wrong in the view which he had expressed as to the summing up of the Lord Chief Justice, and if the finding to the third question was not to have effect, then the plaintiff was, he thought, entitled to a new trial, for in such case there would have been by reason of misdirection no proper trial of the issue of fair comment.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Annual Meeting of Fellows and Members.

The annual meeting of Fellows and Members of the Royal College of Surgeons of England was held on November 20th under the presidency of Sir John Bland-Sutton. The attendance was larger than on any occasion in recent years.

The first half-hour of the meeting was devoted to questions. Dr. Redmond Roche asked how many Fellows had attended the annual meeting in recent years. The President replied that only three or four Fellows, other than members of Council, had attended on the last two occasions; it was evident that the Fellows were so well satisfied with the management of the College that they did not think it necessary to attend. Dr. H. M. Stratford asked whether women Fellows had the same rights and privileges as men. The President said that women Fellows had not the right to vote, nor were they eligible for seats on the Council. Mr. C. E. Wallis asked whether any bona-fide general practitioner holding the Fellowship of the College had ever been a member of the Council. The President said that Mr. S. W. Sibley, a general practitioner, was a member of the Council from 1886 to 1891. There was, however, another side to the question. Until some twenty-five years ago surgeons in provincial practice were general practitioners as well, and some so engaged had seats on the Council. The distinction between the pure surgeon and the general practitioner practising surgery was not then so sharp as now. Mr. Wallis asked further whether the Council had received any complaint of advertising, direct or oblique, on the part of Fellows or Members, and, if so, whether it had taken action under Rule 16 of the College. The President said that no complaint of this nature had been received during his presidency, nor, he thought, during his membership of Council. The General Medical Council, however, was the more competent body to take up any such cases, and the Council preferred to follow the lead of the General Medical Council, which had the power to call witnesses. The College had a discipline committee which had dealt with cases of professional misconduct, though not with cases of advertising. Mr. Wallis pointed out that the General Medical Council could not proceed without a complaint from an outside body, and it seemed that the Council of the College was an appropriate body to make such a complaint.

Dr. W. E. A. Woolley then moved the usual resolution, affirming the desirability of admitting Members to direct representation upon the Council of the College, and requesting the President to state whether the Council had considered any means whereby the collective views of Members of the College might be ascertained on matters affecting their interests. He urged that the Council need have no fear of what would follow an enlargement of the franchise. He could not believe that a Council which represented over 17,000 Members would have less dignity than the present Council, which represented one-tenth of that number of Fellows. On the previous occasion the President had pointed to the smallness of the number of Members attending the annual meeting as indicating the absence of any wide popular demand. But that was a wrong deduction. Members came to the meeting from long distances and at considerable sacrifice of professional time; moreover, they had been discouraged by a long succession of official rebuffs.

Dr. M. I. Finucane seconded the resolution. He declared that the College was not keeping up with the times. Even the curriculum and the standard of examination were not all that might be desired. He also referred to the recent election of direct representatives to the General Medical Council. Only four such representatives were permitted on that body, but the Council of the College, without any consultation of the Members, nor probably of the Fellows either, selected its own representative on the General Medical Council. He maintained that the Members should have a voice in that selection, more especially as it was a function of the General Medical Council to take disciplinary action against any practitioner.

Dr. Redmond Roche complained that the Council had taken a mistaken view of the function of the College. That function, according to the President, was to protect the public from inefficient practitioners. The speaker submitted that any function which it had in this respect in earlier years had been superseded by the General Medical Council. Many things had happened since the Charter of 1848 was granted to the College. The Council shielded itself behind the difficulty of altering the charter when it was faced with this demand of the Members. But the charter could easily be altered if the Council wished it; indeed, not many years ago, the Council did alter the charter in order to allow one very distinguished person to receive the Fellowship. In the speaker's view the autocracy of the Council still persisted as in Thomas Wakley's day, and although the expressions of protest now used might be less violent, the feeling was just as deep-seated.

Dr. F. W. Collingwood, Dr. C. W. Hayward, and Dr. F. G. Lloyd also spoke in support of the resolution, which was put and carried, with one dissentient.

The President said that he had no intention of traversing the statements made that day. He had listened most attentively and carefully to everything that had been urged in favour of the resolution, and he still remained unconvinced. His views on the question were set out last year, and were in harmony with those of his predecessors. He did, however, wish to reiterate that it was one of the difficulties of the Council that the Society of Members did not disclose particulars of its membership, and therefore the Council was unable to judge as to the feeling of the Members apart from their presence at the annual meeting. The Council did not know how far the forty or fifty who were present at the annual meeting could speak in the name of a collective body of 18,000. Those present had no mandate, apparently, from the general body of members, and the Society of Members furnished no statistics.

Dr. Roche said that he was not aware that the President or Council had ever asked for information of that kind. The President said that it had been asked for repeatedly. Dr. Roche said that attention had already been drawn to the fact that there was a disposition in official quarters to use statistics unfairly. It would be idle to suppose that the Society of Members included all the Members of the College. In the van of every movement there were energetic men who gave time and trouble to its furtherance, and his Society claimed to embrace those.

The President: What we really want to know is the number of your members.

Dr. Roche: It exceeds the number of Fellows who voted in the Council election—it runs into four figures.

The President: We do not get it even now.

The President added that he could assure those present that the Royal College of Surgeons was never in a better position numerically or financially than to-day, and therefore the Society of Members need be under no misgivings as to its welfare.

Some of those present desired to put further questions, and one made a protest, but the President declared the meeting closed.

We have received the following letters with reference to the meeting reported above:

Sir,—The annual general meeting of the Fellows and Members of the Royal College of Surgeons was attended by about seventy Members and *two* Fellows (not counting the President and four members of Council). There were also about half a dozen lady members, who were relegated to a lofty gallery and not allowed to speak or vote.

The case for the Members, who claim the right to seats on the Council, was forcibly and unanswerably put by several of them. Of what use was it? The President stood firm for the *status quo* and twitted Members on the small attendance *last* year. What wonder? Why waste time and money on such a farce? The unlimited control by the Fellows, who only provide about one-fifth of the income, was gained, about eighty years ago, by fraud, according to the *Lancet* of that date. Cannot the British Medical Association do something to help the agitation for common sense and justice, which an easily made change in the charter would bring about?—I am, etc.,

London, W., Nov. 20th. S. F. Holloway.

Sir,—May I put before you a few reasons why it would be advisable, both in the interest of the public and of the medical profession, for the 17,000 Members of the Royal College of Surgeons of England to have some representation on the Council of their College?

1. Members of the College in large numbers are doing both major and minor surgery in the provincial and cottage hospitals of Great Britain and also a considerable amount of the surgery in our Overseas Dominions. They know the difficulties that confront them in their different spheres, and it would be a distinct advantage, both to the public and to the science and art of medicine, that they should be given a voice on the Council of the College.

2. The National Health Insurance Acts came into being some ten years ago, but no word of guidance or advice came from the College; but it is highly probable that within a short time we shall have the surgical staff of teaching hospitals being offered paid positions under those Acts. The workings of these Acts are well known to many members of the College, and it would be of great assistance to the College and to the health of the nation if their special knowledge was at the service of the Council.

3. The Fellowship Examination has been opened to women, but, having obtained the diploma of Fellow, they are not permitted to vote or allowed a seat on the Council. This is both unfair and unsportsmanlike: either exclude them from the diploma altogether or, if admitting them, grant them the same advantages that are allowed to men.

4. The Council does not appear to take any action against those of its Fellows or Members who may support or encourage the various classes of unqualified persons, bone-setters and the like, who, trading upon this support and recognition, and being free to advertise, are placed in a much more advantageous position for obtaining clients than the orthodox registered medical practitioner, who comes under the strict supervision of the General Medical Council. Incidentally it is becoming increasingly more difficult for

the public to distinguish between the qualified practitioner and the unqualified.

Surely, Sir, it is high time that a few level-headed, common-sensed general practitioners had seats on the Council, and an opportunity of exercising some control over the affairs of their College.—I am, etc.,

HOWARD M. STRATFORD, F.R.C.S.Edin., M.R.C.S.Eng.

London, W., Nov. 20th.

SIR,—Year after year I had received intimations from the "Society of Fellows and Members," notifying the annual meeting, and year after year (I say it to my shame) these notices, as they came, had been dropped into my waste-paper basket. "What need was there," said a pliable conscience, "to make any change in the Council of the College?" "Was it not composed of Fellows who knew their business well and could be depended on to carry out their duties in the most efficient manner?" "Most certainly," was the reply. "It is quite true that some of the Members (not being graduates of any university) might suffer disabilities in comparison with graduates of provincial, Welsh, and Scottish universities, but, after all, this doesn't affect me, as I happen to be a graduate of one of our oldest universities." Such is the selfish way we argue. If we happen to be top-dog, let the under-dog take his chance. Is this twentieth-century morality?

I attended the meeting for the first time this year. Speeches were delivered, many of them distinguished more by their earnestness than their eloquence, but they all had one thing in common—namely, the elemental principle of justice. Was it right that some 16,000 Members, whose fees mainly supported the College, should have no voice whatsoever in its governance? Should the rights of government be solely vested in some 1,700 Fellows? What would democratic Britain think of this if she knew?

The President of the College did not, in my hearing, answer that part of the resolution—as to whether his Council had seriously considered any means whatever whereby the collective views of Members of the College might be ascertained on matters affecting their interests as Members. He simply stated in a few words that the College was well managed and flourished in a way it had never done before and he could see no need for any alteration. There was nothing more to be said. The guillotine had descended. Autocracy was supreme.—I am, etc.,

T. WILSON PARRY.

London, N.8, Nov. 21st.

SIR,—The very inadequate reply of the President of the College at the recent annual meeting of Fellows and Members was apparently based upon the assumption that the meeting was composed of members of the "Society of Members," whereas but a fraction of that society was present, and in spite of that fact the resolution was carried *nem. con.* in the largest meeting since the war. This shows clearly that the opinion of those Members of the College who were present at this meeting is absolutely in favour of the representation of Members' interests on the Council of the College. The President made much of the so-called small number present, approximately seventy, but said nothing of the thirty-six years of discouragement that undoubtedly keeps down the attendance and leads the less persistent to think that the Council of the College will never consent even to consider their just claims.

It should be noted that on the postcard sent out by the "Society of Members" it is stated that the said society is not out for itself in any way whatever, and that it does not seek representation for itself, but does claim that Members of the College, as such, should have reasonable representation upon the Council of the College in order that their interests may be safeguarded and advanced.—I am, etc.,

C. E. WALLIS.

London, Nov. 25th.

UNIVERSITY OF LONDON.

AT a meeting of the Senate, held on November 19th, with the Vice-Chancellor (Professor E. A. Gardner, Litt.D.) in the chair, Dr. F. L. Hopwood was appointed as from October 1st, 1924, to the University Chair of Physics tenable at St. Bartholomew's Hospital Medical College. The title of Reader in Human Embryology in the University was conferred on Dr. R. J. Gladstone in respect of the post held by him at King's College. Dr. G. V. Anrep, D.Sc., was awarded the William Julius Mickle Fellowship, of the value of £200, for 1925 in respect of the work which he has carried out during the past five years in experimental physiology. Mr. H. L. Eason, C.B., C.M.G., M.D., M.S., was appointed to represent the University on the General Medical Council.

A public lecture by Sir Gregory Foster on "The University of London: what it is and what it may be," has been arranged by the XXth Century Society of London Graduates. By permission of the director, Sir William Beveridge, the lecture will be delivered at the London School of Economics and Political Science, Kingsway, on Thursday, December 4th, at 8.15 p.m. Admission is free and no tickets are required.

The following candidates have been approved at the examination indicated:

DIPLOMA IN PSYCHOLOGICAL MEDICINE (*with special knowledge of Psychiatry*).—W. McWilliam, T. P. Rees; (*with special knowledge of Mental Deficiency*) G. F. Cobb, Anne Fairweather.

UNIVERSITY COLLEGE.

Fifteen entrance scholarships and exhibitions are available for award to students entering University College, London, in October, 1925. Three are tenable in any of the five College Faculties—Arts, Laws, Science, Engineering, Medical Sciences—or in the School of Architecture. Two are tenable in the Faculty of Arts only, one in the Faculty of Science, one in the Faculty of Engineering, one in the Faculty of Laws, three in the Faculty of Medical Sciences, two in the School of Architecture, and one in the School of Librarianship. Most of the scholarships and exhibitions are of the value of £40 a year for three years, but the value of any scholarship or exhibition may be increased by the grant of a supplementary bursary if the circumstances of the scholar or exhibitioner make such a grant necessary. The Bucknill Scholarship (Medical) is of the value of 160 guineas; the two medical exhibitions are of the value of 55 guineas each.

LONDON INTER-COLLEGIATE SCHOLARSHIPS BOARD.

THIRTEEN medical entrance scholarships and exhibitions of an aggregate total value of £1,473, tenable in the Faculty of Medical Sciences of University College and King's College, and in the medical schools of King's College Hospital, University College Hospital, the London Hospital, and the London (Royal Free Hospital) School of Medicine for Women, will be offered. The examinations for medical scholarships will commence on April 21st and June 30th, 1925. Full particulars and entry forms may be obtained from the secretary of the Board, Mr. S. C. Ranner, M.A., the Medical School, King's College Hospital, Denmark Hill, London, S.E.5.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—A. J. Fraser, L. Freeman, C. H. Mason, K. Samaan, Y. S. Wan, H. Winstanley.

MEDICINE.—A. J. M. Davies, M. Murad, Y. S. Wan.

FORENSIC MEDICINE.—S. W. Cuff, L. Freeman, Y. S. Wan, D. Winstanley.

MIDWIFERY.—C. L. Copeland, B. Davis, J. Dywien, L. Freeman, A. Kaplan, C. H. Mason, C. C. Taffs, Y. S. Wan.

The diploma of the Society has been granted to Messrs. A. J. Fraser and Y. S. Wan.

Medical News.

THE annual Sheffield medical dinner will be held at the Royal Victoria Hotel on Thursday, December 11th, at 7.15 for 7.45 p.m. It is open to members of the profession to bring medical guests. Dr. H. B. Brackenbury, Chairman of the Representative Body of the British Medical Association, has accepted an invitation to respond to the toast of the medical profession. It is hoped that all medical practitioners in the district will be able to be present. Application for tickets (price 12s. 6d.) should be made immediately to the honorary secretary, Dr. J. Eric Stacey, 2, Durham Road, Sheffield.

THE Scottish Women's Hospitals' Association of the Royal Free Hospital, Gray's Inn Road, will hold its annual meeting at the hospital to-day (Saturday, November 29th), at 3 p.m. The speakers will include Sir John Lynn-Thomas and Sir James Purves-Stewart.

A FESTIVAL dinner in aid of St. Thomas's Hospital will be held under the patronage of the Lord Mayor at the Mansion House, London, on Wednesday, December 10th, at 7.30 p.m.

THE annual dinner of the Medico-Legal Society will be held at the Holborn Restaurant, London, on Friday, December 12th, at 7.15 p.m.

SIR STCLAIR THOMSON has been appointed Emeritus Professor of Laryngology at King's College, London, and consulting surgeon for diseases of the throat and nose at King's College Hospital.

THE Finlayson Memorial Lectures of the Royal Faculty of Physicians and Surgeons of Glasgow were delivered on November 20th and 24th by Sir Leonard Rogers, F.R.S. His general subject was "Pathological evidence bearing on disease incidence in Calcutta," the first lecture dealing with disease in general and the second with simple and malignant tumours.

THE Royal Commission on Lunacy and Mental Disorder will meet at 5, Old Palace Yard, Westminster, S.W., on Tuesday, December 2nd, and Wednesday, December 3rd, at 10.30 a.m.

THE consulting and active staff of St. John's Hospital, Leicester Square, together with the staff of lecturers at the London School of Dermatology attached, have subscribed for a lecture desk, with a suitable inscription plate, which has been placed in the theatre in memory of their friend and colleague Sir Malcolm Morris, who was a member of the consulting staff at the time of his death in February last.

A COURSE of five lectures on modern bacteriological technique will be given by Mr. F. W. Twort, Superintendent of the Brown Institution, in the theatre of the Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., on December 11th, 12th, 15th, 16th, and 17th, at 4 p.m. Admission to the lectures is free without ticket.

AT the meeting of the Institution of Sanitary Engineers on December 3rd, at 7.30 p.m., at Caxton Hall, Westminster, a discussion on house drainage, with special reference to the intercepting trap, will be opened by Mr. H. A. Roechling.

THE Hunterian Society of London will hold a dinner meeting at Simpson's Restaurant, Cheapside, on December 15th, at 7.30 p.m., when a discussion on headache will be opened from different aspects by Dr. C. O. Hawthorne, Mr. Wilfred Trotter, and Dr. Bernard Hart. The programme for 1925 includes Hunterian lectures by Mr. G. Grey Turner on "Perforation of gastric and duodenal ulcers, and after," and by Dr. H. Letheby Tidy on "Angio-haemic anaemia"; and a discussion on the use and abuse of drugs to be opened by Professor W. E. Dixon and Dr. H. H. Dale.

THE eleventh lecture on cancer, open to members of the profession, and arranged by the Fellowship of Medicine, will be given at 5.30 p.m., at 1, Wimpole Street, on December 1st, by Mr. H. J. Paterson, on cancer of the stomach. The Royal Northern Hospital, jointly with the Royal Chest Hospital, has arranged a two weeks' intensive course in medicine, surgery, and the special departments, which commences on December 1st. On the same date, at the Infants Hospital, a two weeks' course in diseases of infants begins, and also at the Hospital for Diseases of the Skin, Blackfriars, a fortnight's course in dermatology, including venereal clinics. The courses arranged for January relate to cardiology, neurology, ophthalmology, psychological medicine, and urology; there will be also another two weeks' intensive course in medicine, surgery, and the special departments. Copies of the syllabuses of these courses and the programme of intensive and special courses from January to June, 1925, may be obtained from the Secretary to the Fellowship of Medicine, 1, Wimpole Street, W.1.

PROFESSOR BERGONIÉ has presented to the Bordeaux Faculty of Medicine the sum of 100,000 francs for the construction and installation of an institute in connexion with the cancer campaign. It is reported that Professor Bergonié is gravely ill as the result of cancerous lesions resulting from *x* rays. Two years ago amputation of the right arm was performed, and subsequently three fingers of the left hand were removed. The disease has, however, steadily advanced.

MR. LEWIS MACKENZIE, F.R.C.S., has been made a freeman of the borough of Tiverton and presented with a substantial cheque, in recognition of his long public service to the town, where he has practised as a medical man, and to the county of Devon, of which he is a councillor. The vellums embodying the freedom were beautifully illuminated.

DR. JOHN B. DUFF, on his retirement after more than thirty years' practice at Helensburgh, has been presented by his friends and patients with a silver casket containing an illuminated address together with a cheque for £150.

THE council of the Röntgen Society has decided to present the Röntgen Award for the session 1923–24 to Mr. L. H. Clark, M.Sc., Physics Department, Middlesex Hospital, who contributed to the society during the session papers on a clinical *x*-ray balance radiometer and on the measurement of *x*-ray intensity.

THE second Pan-Russian Congress for Combating Venereal Disease will be held at Kharkoff in December.

A NEW bi-monthly journal, the *Radiological Review*, has been published in Quincy, Illinois, and is devoted to the progress of radiology, with special reference to the requirements of the general practitioner. The first number includes original articles on the *x*-ray diagnosis of endocrine diseases and the *x*-ray treatment of whooping-cough. A considerable amount of space is given to abstracts from various medical journals.

THE first number of the *Indian Veterinary Journal*, the new quarterly publication of the All-India Veterinary Association, contains a review of the presidential address delivered at the second All-India Veterinary Conference in March, and an account of the subsequent proceedings. Among the articles in this number are papers on rat-bite fever in dogs, spirochaetosis in fowls, and dropsy in elephants.

THE Japanese Government has decided to allot £200,000 for the establishment of an Institute for Natural Science in Shanghai. The research work in the institute will include several branches of pathology, anatomy, bacteriology, parasitology, serology, and Chinese pharmacology. A yearly grant of £50,000 is to be made. It is hoped that the institute will be completed within three years.

THE part of the Annual Report of the Ministry of Health for 1923–24 which deals with town planning has been published separately. Copies may be purchased, price 6d., directly from the Stationery Office at Adastral House, Kingsway, London, W.C.2; 28, Abingdon Street, London, S.W.1; York Street, Manchester; 1, St. Andrew's Crescent, Cardiff; or 120, George Street, Edinburgh; or through any bookseller.

MALARIA shows an increasing tendency to spread in the Caucasus. According to recent returns, out of two and a half million inhabitants in the Republic of Azerbaijan, one and a half million are suffering from the disease.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.* Authors desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Financial Secretary and Business Manager, 429, Strand, W.C.2, on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—not necessarily for publication.

Communications intended for the current issue should be posted so as to arrive by the first post on Monday or at latest be received not later than Tuesday morning.

THE telephone number of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is Gerrard 2630 (Internal Exchange). The telegraphic addresses are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westrand, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westrand, London.*

MEDICAL SECRETARY, *Mediocera Westrand, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"J. H. A." is a salaried officer and inquires what allowances are due (*a*) for use of his car, (*b*) for purchase of instruments, and (*c*) for subscription to the Medical Defence Union.

*** (*a*) The sum allowable is the amount actually expended on the running and upkeep of the car and attributable to the necessary and exclusive use of the car in the performance of the duties of the office. The best way to deal with the matter is to keep a record of expenditure and also of mileage, distinguishing in the latter case between private and professional use of the car. Where such figures cannot be produced the matter is one for such estimates as can be reasonably substantiated. A mileage rate is, we believe, rarely allowed—so much depends on local circumstances, etc.; but "J. H. A." might come to some arrangement at from, say, 4d. to 6d. a mile on giving an undertaking that future claims shall be based on carefully kept records. (*b*) The original cost of instruments is capital outlay and cannot be allowed; if he is required by the terms of his engagement to provide his own instruments, the cost of *renewals* is allowable. (*c*) The subscription is allowable if the above-mentioned terms require him to be a member, but not otherwise.

Change in Nature of Work. Instruments.

"G. W." was in general practice but doing also a fair amount of general surgery, but has now restricted his professional work to that of a consulting surgeon; he did not sell any portion of his general practice. He inquires also as to the treatment of expenditure on surgical instruments.

*** The question is whether now that "G. W." has ceased to do general practice work he can eliminate from his receipts those relating to such work and return his surgical fees only. The matter is not entirely free from doubt, but in our opinion that would not be correct, and a claim on those lines would not be likely to succeed. It is not as if he had changed his profession; on the facts stated he has only changed from one branch to another of the same profession and that without, apparently, changing his professional address. With regard to the instruments the position is that a surgeon is entitled to charge as a professional expense the cost of *replacing* worn out or obsolete instruments, but not of improving or enlarging his equipment; if, for instance, an instrument costing £5 is scrapped and replaced by a *better* one at a net cost of £7 10s., then only £5 can be charged.

MEDICAL SUBSCRIPTIONS AND INCOME TAX RETURNS.

DR. JAMES NEAL, General Secretary of the Medical Defence Union, 49, Bedford Square, W.C.1, writes: It was stated in your issue of August 30th last (p. 391) that deductions were allowed in the case of subscriptions to various medical societies, but that the position of the Medical Defence Union in this respect had not been actually determined. I am directed to inform you that at the last meeting of the council of the Medical Defence Union a letter was received from the Board of Inland Revenue stating that the Board will offer no objection to the allowance of the annual subscriptions to the Union as an expense in the computation of the professional profits for income tax purposes of members who are assessable under Schedule D of the Income Tax Act, 1918.

LETTERS, NOTES, ETC.

Assistants in General Practice.

The large amount of correspondence that has been received on the subject of assistants in general practice makes it impossible to print the various letters in full. We therefore publish only a selection of abstracts bringing out the main points of view expressed.

"T. N." writes: I agree with "W. D." (November 1st, p. 835) that one must distinguish between "newly qualified persons and experienced ones." There is a vast difference. The former have come straight from hospital with a knowledge of modern medicine and the latest clinical technique. Some of the latter are so "experienced" that they do not require to use a thermometer. I disagree entirely with "W. D." when he says £350 intern is fair pay for a young doctor with some experience. The routine of an ordinary mixed practice can be learned without teaching by anyone of average intelligence in about a couple of weeks. Does "W. D." honestly think £350 intern is a fair share of £3,000, or even £2,000, in a one-assistant practice where the assistant does fully two-thirds of the work? An assistant is usually on a 24-hour shift, and he gets perhaps £1 a day, which is equivalent to 10d. an hour. One cannot compare hospital work with general practice. In the larger hospitals the residents have practically fixed hours, and it is the exception to be called upon at other times. They are taught, whereas the assistant in general practice teaches himself. In smaller hospitals, where there is only one resident, his irregular hours approximate to those of the assistant in general practice, and he gets from £200 to £350 intern, but he is far freer.

"Employer" writes: Personally I should consider any pay inadequate for work in Whitechapel, but surely a man who takes an assistantship in the slums does so with his eyes open. Your correspondents appear never to have heard of the country. I expect an assistant to help at morning surgery for about half an hour; to call and work at outlying surgeries on appointed days; to visit and dispense; to do an afternoon round when necessary, perhaps four times a week (the half-day off is assured); to help at evening surgery for about half an hour; to do most of the confinements (about thirty a year); and to do a fair share of accidents, special journeys, and night work. In return I offer a home in the country, "living in"; a car for all journeys (driver not provided), and the use of a car for "joy riding" at the cost of running; every other Sunday off, and a month's holiday on full pay; as much advice and instruction as I can give in all things appertaining to the running of a country practice; and £200 per annum. The country is admittedly dull, but golf, cricket, and football can all be had on the spot. I may be prejudiced, but I feel that any young man or woman straight from hospital has no very real grievance working under such conditions, for the first year at any rate.

"B." writes: As an elderly general practitioner who would only be too glad to employ a well paid assistant if I could, may I point out why I find it impossible? However skilled and efficient an assistant may be the general practitioner's work is of necessity largely personal. It is "myself" many of my patients want, not a substitute. Were I to send an assistant these would transfer to another doctor, believing I was slighting them. My practice was at first suburban, adjoining a large city; now it is mainly a working-class area, in part very densely inhabited. I am approaching the maximum I may have single-handed on my panel (2,500 insured persons), and in the following calculation I assume that I have reached this permissible maximum. My private practice brings in up to £230 a year. So I reach as the income: from a panel of 2,500 at 9s., £1,125; in private practice £230; a gross total of £1,355. I have two additional surgeries with caretakers, etc., and taking into account income tax (making the usual deductions) the income is reduced to £931. Deducting interest at 5 per cent. on the capital invested—two houses used as surgeries, and original cost of practice—the net income appears as £821. If, then, one is to pay an assistant £400 or more, what is left for the practitioner himself? He cannot afford an assistant, and so he has to go without.

"Senex" writes: A young man straight from hospital has admittedly a great deal to learn in general practice, and can now obtain a salary of £300 a year all found, compared with £120 a year twenty-five years ago, when also food was very much cheaper, while the income from general practice has not increased in anything like the same proportion. I cannot see that he has any just grievance, or any claim whatever to a free partnership after two years' (average) service as assistant in the practice, which has cost his principal at least one and a half years' purchase. The private claims on the earnings of "Anxious" (November 15th, p. 929), which have, unfortunately, prevented him from saving, can hardly be used by him as a reasonable basis for a charge of harsh treatment against his employer. Young doctors are apt to ignore the hard work of years and close attention to duty that have built up the average practice. I suspect that these young men will take a very different view when their time comes to employ an assistant.

"Young Member" writes: Every week we pick up our Journal and find there certain public appointments black-listed as offering less than £500 per annum, yet in the same pages we see advertisements from fellow members of the Association offering full-time assistants £200 per annum. We are asking, Wherein lies the consistency of the attitude of the British Medical Association in this matter? It is a big problem and will have to be tackled sooner or later. We are older than was the average pre-war graduate; most of us served during the war and came back three to five years older with as much capital as would buy a civilian outfit and no more. We have managed to complete our medical courses, and have had to forgo resident hospital appointments, which we should have liked, but could not afford. To secure even a minor share in a partnership requires a minimum of about £700; where are we to get it? Our only hope is in obtaining assistantships at fair salaries so that we may by dint of earnest endeavour and saving be enabled in a few years to lay enough aside to allow us to purchase a minor share. At present I have no personal reason to complain, since I am assisting one who has treated me as a member of a noble profession should. Is it fair that he should have to continue to do so while his colleagues advertise and obtain assistants at a fraction of the amount? How long can he be reasonably expected to do so, and what of others less fortunate than I, who, wherever they apply, find the doors of a living closed to them, because scores of applicants, generally ladies, have also offered their services either gratis or for a grossly inadequate salary?

"Returned Emigrant" writes: I have been greatly impressed with the absolute refusal of all but a very small minority to consider taking a post as assistant in really good established practices abroad, even in British colonies. The terms of assistantship or remuneration were not considered seriously by these young men; so soon as they found that acceptance necessitated their going abroad they declined without further consideration. The few willing to go are too often not up to the standard required for first-class practices abroad, where a man has to rely on himself far more than at home, where he has consultants always at call. From my personal experience there is no comparison between the prospects of good professional work and of adequate remuneration of men going abroad and those remaining at home, in the case of any but those destined for hospital staff appointments. Registration with permission to practise has in several British colonies or dependencies been restricted hitherto to men on the British or Colonial *Register*, but a warning to the rising generation may be given that with the colonies becoming more and more cosmopolitan, and well equipped young medical men refusing to accept billets hitherto kept for our own nationals, a move to break down the registration restrictions might be necessary in future. This has already occurred in the registration of dentists in one case, to my personal knowledge. It should be remembered that, generally speaking, taxation in other parts of the British Empire is often much less than in Great Britain; in many cases there is no income tax or its equivalent.

"Ex-Assistant" (whose letter in our issue of October 11th, p. 690, opened this correspondence) writes: General practitioners recently made a firm stand over the capitation fee; assistants can do the same for a fair living. I put forward the following suggestions for improving the conditions under which they are groaning: (1) A minimum remuneration should be fixed—say, £350 indoor and £450 outdoor. (2) Adequate time off duty. (3) The question of the "bond" should be investigated; if a man has to sign such stringent restrictions he ought to be protected. (4) The living accommodation should be improved; the quarters of many assistants are a scandal. I appeal to the British Medical Association to enforce the above conditions; then, and then only, will the assistant's life be worth living; at present it is a mere drudgery.

A Foot Support for Use in Bed.

Mr. W. F. Rawson, F.R.C.S.Ed. (Bradford), writes: I have tested recently, on behalf of the inventor, Mr. Herbert Mitchell of Bradford, a foot support for use in bed, and several of my patients speak very highly of it. Everyone knows how difficult it is to take meals in bed, or to read or write, on account of the constant tendency to slide down. In the "Hermit" support the difficulty is solved, as the apparatus is adjustable to the length of the individual, whose feet can be kept in constant contact with it. Mr. Herbert Mitchell, "Holly Bank," Bradford, can supply all particulars, also the article itself.

Dr. R. Bolton McCausland, F.R.C.S.I., formerly surgeon to Dr. Steevens's Hospital, Dublin, in a note recommending the same appliance to our readers, gives the following description of it:

"It consists of a strong crosspiece of wood, which goes against the end of any bed, either high or low at the end, and rests there firmly. This is attached to another strong wooden crosspiece, comfortably padded for the feet to rest against, the whole being joined together by light strong supports at the sides, which allow of the shortening or lengthening of the distance between the two crosspieces to suit the user's requirements."

Quinine in Lobar Pneumonia.

Dr. L. Nicolaysen (Christiania) writes to point out that in the issue of the *Epitome* of October 4th, No. 242, quinine sulphate was erroneously mentioned, the correct ingredient of Aufrecht's prescription being quinine hydrochloride.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 33, 34, 35, 37, 38, and 39 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 36 and 37.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 203.